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ABSTRACT

These proceedings contain the keynote address, four papers, and summaries of four group discussions of the Eleventh Annual Pennsylvania Conference on Postsecondary Occupational Education. The keynote presentation is by Harold "Bud" Hodgkinson, distinguished analyst of current trends and the likely future of social, economic, and political settings in which postsecondary education will be operating. His presentation discusses international trends related to the world of work, planning issues, public attitudes toward education, the effects of education in the United States, population trends, industry involvement and its benefits, and linkages of community service agencies. The other four papers concern the four issues which were focused on by the planning committee. They are entitled Retraining Programs for the Handicapped Adult, Upgrading Programs in Postsecondary Education, A Conceptual Framework for Occupational Education Community Service Programs, and New and Emerging Careers. A summary of the highlights of a group discussion on each of the issues immediately follows the respective paper. Appendixes include the conference program and notes on authors and editors. (YLB)

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The Eleventh Annual Pennsylvania Conference on Postsecondary Occupational Education:

New Horizons in Postsecondary Occupational Education

Jerry L. Wircenski
Donald E. Evans
S. W. Martorana
Editors

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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FOREWORD

The decade of the 1980s will present new and different challenges for postsecondary education. The new challenges will encourage changes that will have an impact on the mission of this segment of the educational arena. The Eleventh Annual Pennsylvania Conference on Postsecondary Occupational Education was designed to address some of the emerging issues as we stand at the threshold of "New Horizons in Postsecondary Occupational Education."

The land grant philosophy is the basis for The Pennsylvania State University's involvement with this type of conference. As the Commonwealth's land grant institution, the University plans its educational activities and programs to serve the needs of various clienteles. It recognizes that these needs are constantly changing, and that the programs must be adjusted to accommodate the changing needs. Such is the case for postsecondary occupational education.

We believe the papers generated for and by this conference contained in this volume of the proceedings will be extremely useful to all who are concerned with serving the needs of students in vocational and postsecondary education. As administrators responsible for the units that sponsor the annual conference at the University, we are pleased to endorse this publication of the proceedings of the Eleventh Annual Conference and to encourage our colleagues in the

field to continue their efforts to maintain the tradition now in place.

Gene M. Love
Center for Vocational Teacher Education
Department of Agricultural Education

Kenneth P. Mortimer
Center for the Study of Higher Education

Elizabeth M. Ray
Division of Occupational and Vocational Studies

PREFACE

A prime purpose of the Annual Pennsylvania Conference on Postsecondary Occupational Education is to help professionals in the field keep abreast of emerging new developments and issues, and to provide professionals with an opportunity to examine the impact these developments are likely to have on policies and practices which now prevail. This year the planning committee focused on four issues. Each relates to pressures for new programmatic emphases in the field: upgrading programs of postsecondary occupational education, retraining programs for the handicapped, community service programs, and new career programs. Moreover, the planning committee believed that the source of pressures for greater emphasis on all four of the new program thrusts is rooted in changes now evident in the broader society and economy of the nation.

Such was the conceptualization of a conference which brought together a keynote presentation by one of the most distinguished analysts of current trends and the likely future of social, economic, and political settings in which postsecondary occupational education will be operating, and a considered paper by a specialist close to each of the four program issues defined. The papers presented and a summary of the group discussions at the Eleventh Annual Conference comprise the substance of this monograph. Dr. Harold Hodgkinson's presentation keynoted the conference and

constitutes the first section of the monograph. It is followed by the papers and a related summary of discussion on each programmatic issue.

The papers appear essentially as they were prepared and presented by the authors, however, the discussions required considerable editing. The editors were extremely careful to preserve the key observations and keen ideas that resulted from the spirited discussions.

Each year's conference deliberations and published proceedings adds to the record and base of knowledge believed to be of significance to leaders in scholarly effort and expert practice in the field. We consider this monograph a worthy addition to the series.

Jerry L. Wircenski
Donald E. Evans
S. V. Martorana

ACKNOWLEDGMENTS

The success of a conference lies with many people. The codirectors of the Eleventh Annual Conference on Postsecondary Occupational Education wish to express their appreciation to those administrators and faculty who attended this year's conference, for it is their participation which contributes to a successful conference. A note of thanks is also expressed to the conference planning committee: Dr. Elizabeth M. Ray, Head, Division of Occupational and Vocational Studies; Dr. Gene M. Love, Department Head, Agricultural Education; and Dr. Kenneth P. Mortimer, Professor and Director, the Center for the Study of Higher Education, for their professional and personal commitment to the ideals of the Postsecondary Occupational Education Conference. A further word of thanks must also be extended to those members of the conference advisory committee who provided ideas and input regarding the organization, planning, and evaluation of this year's conference.

The impact of a conference of this nature is often measured by the main presenters. The conference codirectors would like to thank Dr. Harold "Bud" L. Hodgkinson, Ms. Margaret "Peg" Pyne, Mr. M. Michael Freedland, Dr. W. Gary McGuire, and Mr. James D. Bennett as well as the panel of reactors for their contributions to the topical discussions.

As for those individuals who worked behind the scenes, Ms. Pat Bodman, Conference Coordinator at the

University, and members of her staff deserve a special word of thanks for the considerable amount of time spent in planning, registration, and, in general, ensuring a smooth-running conference.

The preparation, editing, and assembly of the conference proceedings was a result of the hard work of many individuals: Mr. John J. Vincent for his editorial assistance; Ms. Pamela Carey, Mr. Edward Whyte, Mr. Walter Heizenroth, and Mr. James McCoy, for their efforts as session recorders; and members of the Higher Education Student Association, Penn State Collegiate FFA, and BETA Chapter of Collegiate VICA for their hosting of the Wednesday evening social hour.

Finally, appreciation is given to Ms. Jane Kurzinger, who typed the draft; Ms. Patricia Duich, who typed this monograph; Ms. Patricia Kohn, who did the final editing; and the secretarial staffs of the Center for the Study of Higher Education, the Department of Agricultural Education, and the Division of Occupational and Vocational Studies for their long hours of assistance in preparing a conference proceedings for publication and distribution.

KEYNOTE ADDRESS

Dr. Harold L. Hodgkinson

President
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In higher education we have some specific problems. I want to present to you briefly the results of a series of extensive research studies dealing with the ideal organization of an institution of higher education. It is called transverse organization and has a lot of advantages. One of the things it may mean is coordination of interfaces in our system between local, state, and federal authority; between elementary, secondary, and higher education; and particularly the collegiate, industrial, military, and other sectors that are building significant educational programs past high school. Increasing the credibility with the public is very important, and I think nobody in higher education is quite as aware of how important that could be as those who work the political side of the street.

The possible new sources of support from alliances are just beginning to become known. Many small colleges, for example, that are on the ragged edge financially, have discovered that if they become allies with some local industrial firm, the kinds of resources that can be borrowed, traded, or brokered with that particular corporation may improve their

budget position enormously. So the possibilities for real gain from these kinds of alliances with business, and with the world of work generally, are quite significant. If we can clarify the outcome of higher education, particularly in terms that people can understand, it seems that we will be money ahead. There are some things that we can do, and I want to discuss some of them with you.

One of the reasons we are in such trouble in local communities today is that educational leaders such as superintendents of schools, presidents of community colleges, etc., have not effectively brought their case to the people because they have considered teaching to be somebody else's job. I cannot think of a more important job in relation to what I do now, than my role as a teacher of the board of trustees to whom I report and the clienteles and constituencies that my organization serves. My job is to be the best teacher I can possibly be for those people.

Here are some of the international trends that relate to the world of work that we all have to worry about. One of the reasons we were worried occupationally, and in terms of education in this country, is because the birth rate is declining; we assume it is a uniquely American phenomenon and it is not. Most of the OECD member nations (Organization for Economic and Cultural Development) are having exactly the same decline. In addition, unemployment remains very high in most western nations. The pressure for a higher quality of life and better working conditions has

brought a new kind of worker participation into the decision-making process. Fifteen years ago, to be a good worker meant that you did what you were told and did it to the best of your ability and then management would evaluate your work and you would be successful. Today, it is very much a trade-off model in which you broker your interests with those of leadership and you decide on the working conditions and the jobs to be done, and in addition, you can broker your way into the evaluation process and determine how well you have done your job. The work ethic, which used to mean loyalty to the corporation above all else, is being replaced by this new notion that I am a whole person. Work is simply one part of my life, and I have an obligation to myself that transcends my duty to the organization. On this point, remember that every one of the Fortune 500 companies in the United States now has a vice president for human resource development. I can assure you, that is different from personnel. A personnel office is a clerical function designed to place the best people in the best jobs, preferably by not talking to them if that can be managed. The job of a human resource development office is to "grow people," quite literally to make of them everything they are capable of achieving and want to achieve. The fact that businesses have accepted this concept is of enormous importance.

We find working lives are changing. People enter the work force later because of the scarcity of work. Many countries have to ration work if there is not

enough to go around. We, therefore, hoard work in the middle years. Most of us in our thirties and forties are workaholics. In all the western nations there are many more women in the work force, between 20 and 60 percent. The Scandinavian countries tend to have a high percentage of women workers. The work week is declining everywhere, and that strategy for reducing unemployment is 2,000 years old. In the declining days of the Roman Empire every other day was a legal holiday. Indeed, the whole Rooseveltian approach to dealing with inflation and unemployment was tried by the Roman Senate, and there is a delightful little book on the Rooseveltian policies 2,000 years ago which is called The New Deal in Old Rome. The notion of trying to deal with unemployment by shifting the work week around is a classic solution to a classic problem. We had a sixty-hour work week before the depression; after the depression we had a forty-five hour work week. That is how we solved the depression.

All western nations share the same problem of an uneven distribution of leisure time. Some of us are well trained to deal with leisure time. Blue collar workers, on the other hand, because of collective bargaining agreements, now have a fair amount of discretionary time, and they have no training in how to use this new leisure time that could be theirs for the asking. The notion of jobless growth is beginning to become very popular. On my way back from China last December, I had a chance to stop in Japan and talk with some Korean auto manufacturing people and

discovered, to my amazement, that in three years a new assembly line which makes cars will open in Korea. It has no workers. The whole line is handled through robots. In the office of the foreman of this Korean plant there is a button marked "on" and "off." When you push the button to "on" it makes cars--astonishing to think of! There are no worker fringe benefits, no major medical, no retirement benefits, no time off for jobs not done, none of that. We shall be competing by 1982 with an automated production of cars. Korea is going to have an incrediby high unemployment rate, and at the same time, their gross national product will go out of sight. They will be making an enormous amount of money, although half the population will be unemployed. How to put those two things together and what to do about it is a very interesting set of problems. Those are some of the things that occupationally will involve us all in the West in the next few years.

It is very easy to say that our problems are unique in the United States, but it is also fallacious. Most of the things that we go through, such as birth rate changes, are remarkably paralleled in all the other western nations. In looking for differences by country, the major differences, I think, are not in the West, but on the other side of the world. The population figures from 1830 up to the year 2000 indicate that we have completed our growth in North America. Latin America will grow slightly; Europe is exactly where we are; Africa will have slight growth;

and the Soviet Union has basically stopped growing. But India, China, and other Asian nations will constitute half the world's population by the year 2000. That is where the action will be. Those nations may tend to elect younger leadership over a ten- or fifty-year period, and younger leadership has a couple of things in common. They take a lot of risks. They often do things in a peculiar way. We will be zero in terms of demographic growth; these countries will be very large in terms of demographic growth, and nobody is quite sure what the consequences will be.

I would like to mention briefly the following items. First of all, planning issues--why is it that long-range planning does not work? It did, until 1973. A leader could pick a trend and ride it, because you could be quite sure that a trend would stay in place. For a period of ten years you could accomplish your objectives and then either retire or go on to a new set of objectives. In 1973, for reasons I do not entirely understand, constants began declining. There were fewer of them and variables appeared all over the place. One characteristic of any planning system developed in the 1960s, compared to the 1970s, is the number of constants versus the number of variables. There just are not very many constants today that you can build a plan around. Presidents made reputations by knowing what was going to change and what was not. Why is it so difficult to predict those things today?

We cannot just have a plan for one college anymore. We have to know what is happening in our world.

Look at Latin America which had a 74 percent average inflation rate in 1976. How do you plan a church or bowling alley with 47 percent devaluation of the currency during a one-year period? This is the world we live in and if you look at those inflationary rates, you see another reason why it is so difficult to plan, especially for us. None of these things will remain constant in any of those countries.

In addition, we know that the per pupil cost of education is increasing faster than the consumer price index. It always has and always will, because nothing is quite as labor intensive as what we do. We have a lot of machines, and machines are very helpful adjuncts. But, nobody would argue that they should take over for a teacher. The main reason we are so expensive is that we are labor intensive. Half the education budget goes right off the top for teachers' salaries, and I would not have it any other way. We must face the fact that what we have to tell the public is, of course we are labor intensive. We have been, and we shall continue to be, but look what you get for your money. That means we must be prepared to tell people what the educational system returns on a very large tax investment. Just to show you how much inflation is kicking all of these things around--had you bought blue chip stocks in 1967 when the Dow was at 875, and sold them in December 1977, the Dow would have had to be at 2,500 for you to break even. All this is simply to say that inflation is the big enemy as far as middle-class values are concerned.

Americans have always believed from the depression that you should save your money by putting it into a bank because tomorrow your rewards will be increased three- or four-fold; that is, it is prudent to do and you get a return on your investment that is very significant. That worked for my father, but it does not work for me. If I put my money in a savings account at 5.5 percent interest a year, I am losing 7 percent value of my money every year. This means that when a middle-class person saves money and puts it in a bank, he or she is committing economic suicide. In periods of high inflation, savers are punished and borrowers are rewarded. A borrower is a person who borrows someone else's money and lets it inflate. That is where the system works in a funny way. Americans have discovered the fact that our rate of saving as a percent of the GNP is now the lowest it has ever been in the United States. Savings is one good indicator of how much faith people have in the economy. When the price of gold goes to $440 an ounce, I keep thinking that I would like to find some nice desert island that I can live on the rest of my life. When Americans only save 17 percent, it is a real problem.

The kinds of mistakes we are going to make, I suspect, will be failing to understand that the changes will matter in the next decade, and that the principal change will be the movement from quantity of growth to quality of growth.

I worked with the American Management Association for two years. When I started, it was a $70 million

firm. Of that $70 million, $6 million of it was profit. When I left we were an $82 million firm and at $82 million our profit margin was $1.5 million. We were significantly larger in terms of operation, but the profit margin had been squeezed to near zero. Why? Because operating costs went up. We have to understand that the quantity of growth is not as important as the quality of growth, moving from revenues. How much money did you bring in, or, in our case, how many student credit hours did you generate per faculty FTE?--which is a quantity measure. What was the return on our investment? What that would mean educationally, I suspect, is of the amount of money we invested in each student, how much did he or she learn? My argument is that we cannot answer that question today, which is one reason why we have trouble with legislators. When we think about planning, some of the problems we have are underestimating inflation, new costs, and the rate of change. Because of this, we tend to underestimate opportunities.

Many community colleges have discovered that there are some marvelous opportunities today to educate new clienteles, but very few people are looking for new opportunities. My theology is that opportunities are distributed randomly from the heavens. What matters is not the number of opportunities, but how many people are out there looking for them. Right now there are not many people. If you want to look for new clienteles, and new ways of educating them, this is a marvelous opportunity to do just that.

A final point on planning has to do with how we integrate these soft planning factors, which are hard to number, into our planning designs. In higher education, these are very difficult. We know that women are playing very different roles today. We know that people are getting a lot more independent. There is a lot of autonomy; there is less automatic obedience than when we were growing up. Personnel has changed to human resource development, as we pointed out. Then there is this increased awareness, some of the ambiguities that you could call the social facts of life. I think we have as much trouble with these as telling our children about the birds and bees. We do not like to think about ambiguous things in the United States. We much prefer to think of problem solving as being one problem, finding the best answer, putting the answer down, and going on to the next problem. The trouble is that the world does not seem to be organized exactly that way. It is very difficult for us to take these things as seriously as we should. It is important in planning to realize that successes may bring some unanticipated negative consequences. My point is simply that there are always consequences that we did not expect. We have to learn how to think in an ambiguous way and to write both sides into our planning equations. That is very difficult to do. Those are some of the planning problems that we all have in common--businesses, churches, and institutions of higher education have them.

Let us look at public attitudes toward education, which is a very real problem for all of us these days. This is a very cynical time politically. The essence of political cynicism, I think, came in Wisconsin last year in the form of a campaign for State Treasurer by a candidate named Roger Stauter. Probably none of you have ever heard of Roger. Roger ran a brilliant campaign for the first time out, got 15,000 votes in the primary, appeared at all the cocktail parties, and gave his views on issues of the day. The only problem with Roger's campaign, that anyone could figure out, is that Roger Stauter is a German Shepherd. He is a very nice German Shepherd, very able and energetic. Nevertheless, 15,000 Republicans in the state of Wisconsin voted for Roger. Nobody was fooled, because in every ad Roger's picture appeared. He went to all public appearances for which he was scheduled and gave his views on the issues. Nevertheless, Roger carried 15,000 votes. That has not happened since 1929 when, I recall, the Republicans of Vermont ran a cow for State Auditor. That suggests something about the vote of the people's faith in the political process just now.

This cynicism is a problem for businesses in the form of shoplifting. It is a $2 million problem. Macy's inventory shrinks 3 percent a month; Macy's is not interested in finding out where it goes, because if they did find out, they would have to prosecute, and obviously they do not want to do that. Macy's would much prefer to pass the loss on to you and me,

which is how businesses often solve problems. That suggests some very real loyalty questions within the world of organized business, as well as in politics. This is not a brand new phenomenon. We are fond, I think, of attributing our cynicism to Watergate. But before Watergate ever happened, people were expressing less faith in social institutions, except for medical institutions. Medical doctors have ways of sustaining people's faith. Three years ago surgeons in Los Angeles County stopped doing elective surgery. There were big articles in the papers about these callous surgeons who have no concern for human life. Now we know what happened to the death rate during the six-month period when surgeons were not operating--it went down. Fewer people died because the surgeons were not operating. How doctors manage to maintain their credibility has always escaped me, but they do. So the decline in loyalty is not necessarily a Watergate phenomenon.

A final point on loyalty has to do with this very interesting study which the press has studiously avoided, which shows that if you ask people what they would like cut in terms of public services, and what they would pay more tax money for, you find that an astonishing number of them would pay more money for better police and fire protection, and the leader is public schools. One-third of the people would pay more tax dollars for better public schools and community colleges, but the American people never have had a chance to vote for this. But if you give the people

the option, they will, at least, say that they would like to have more in this area. In addition, the public would like more money spent on research in education, health, the environment, and crime prevention. If you check that with how we actually spend our research dollars in the United States, you will find an inverse correlation. That is, what people would like more money spent on, less money is actually spent. That will probably shift, but not in your lifetime. There is a lot of support for more research which is not supported with dollars at the present time.

Let us look at the data on what kind of a job we do in our system, because this is important for the American public to know and the press does not spend much time on this. The best study that I know of concerning the long-term effects of education is a study of 80,000 adults over a wide age range which asked several general knowledge questions. The conclusion is striking. The longer you stay in school, the more you know, and these differences hold throughout your life. A sixty-year-old who has completed college knows more at sixty than a sixty-year-old who only completed high school. A forty-five-year-old high school graduate knows more at forty-five than a forty-five-year-old who only completed elementary school. At every age level, those who are in the educational system have a pertinacious net gain, that is, it stays with them. I had the pleasure of reporting this study to the Education Press

Association of America when I was in the federal government, and at a cocktail party afterwards (where most people speak the truth) three editors asked me if I really thought anybody would buy a newspaper to hear that the colleges of the United States work? That, I think, is an inbred impression that the press has generally. If there are positive data about the schools, there must be something wrong with it and even if there is not, who would buy a newspaper simply to hear that that is the case?

Now, if you look at what we have done, it is quite remarkable. No other nation that I know of has managed to move this rapidly. From 1950 to 1978, the number of blacks graduating from high school has risen from 25 percent to 75 percent. In 1950, just about half the whites graduated, and now it is up to 85 percent. It is astonishing. I always assumed that everybody graduated from high school, because I did.

There is also some indication from an Indiana study that the 1976 students did better on test items than their counterparts did in 1944, although the 1976 group was much more diverse by race and social class. We have, then, diversified the group of people we serve. We have moved from a meritocratic agenda to an equalitarian agenda. Looking at the diversity in college attendance, most of the increases from 1970 to 1976 have been among blacks and females. In fact, the percentage of blacks and females attending college is nearly as great as their percentage in the population as a whole. That is a big change. Name another

institution in the country that has become that diverse by race and sex that fast. Have the churches, government, or military? I do not think so.

Look at what we have done for senior citizens. Six hundred colleges have special programs for them. I call to your attention the case of Ed Clark, who finally got his B.A. degree from Georgetown in 1977, which is forty-four years after he was thrown out of Amherst College for getting married. He was three credits short of graduation. Since dismissal from Amherst, Ed has compiled sixty college credits at other institutions at the level of "A-" or better. He has returned to Amherst on numerous occasions to ask them to accept his sixty college credits in place of the three he lacked. Amherst authorities told him he made his decision, and now he must live with it. Ed's story seems absurd today which tells us how far we have come. Talk to student personnel officers today and they will tell you that if students would get married, most of our problems would be solved.

We really do an excellent job, but we do have to be aware, as much as we can be, of what the job is. I think we have moved from an aristocratic commitment which meant, if your parents were in the social register you went to college, to the meritocratic era in the 1950s particularly, when we had a huge horde of people descend on us and our task was to decide who to reject. In the new era we have a decline in the number who seek us out and who are much more concerned with competency and proficiency. Do we make a difference

in the lives of these people? Do we have a value that we add to their lives? That was never asked before. The question was, how many can we exclude?--and that is a measure of our status.

Let us look at some of the demographic problems that will make our lives difficult in years to come (see p. 29). I think we all know that we are about to run out of eighteen-year-olds. By 1995, the country as a whole will be back to where we were in 1960, in terms of the number of eighteen-year-olds. That means that your college should have as many buildings as it had in 1960, and that you should have as many faculty as you had in 1960. That is the perception you are going to have to work very hard to change unless you want steady cutbacks in the size of your budget. We are declining nationally in the number of eighteen-year-olds. That is hardly striking anymore.

The frost belt states have big problems, although probably more important in terms of our future, is the net gain. In the old days, before New Jersey had a public system of higher education that was worth anything, we could be assured that our freshman classes would be filled by the largest export crop which came out of New Jersey, which is not truck farm produce but college students. Now the number of college students leaving the state has been reduced because New Jersey has its own system. The nine states comprising the frost belt will lose significantly in terms of the next decade's enrollment potential, not because of eighteen-year-olds in the

state, but because of their limited power to attract students from the outside. That is particularly true of the university system and less true, I suppose, of community colleges. The big winners, of course, are the sun belt states. That is where all the college students are going. It is the nine frost belt states, then, that suffer the most. These nine states enroll 26 percent of the college students in America. Even within a state like Illinois, you find that the northern part of the state, the Chicago area, is increasing in eighteen-year-olds by about 15 percent, and the southern half of the state is decreasing by about the same amount. So you have a state going in two different directions at once. Looking at the sun belt, you can understand why this is true. If you look at the good jobs, you find that most of them are in Beaumont, Houston, Fort Lauderdale, Albuquerque, Ventura, Austin, San Diego, Tucson, West Palm Beach, and Columbia (South Carolina). That is where the new jobs are going to be concentrated. It is all sun belt, with one exception. Consequently, everything moves toward the sun belt--political advantage, jobs, eighteen-year-olds, money, the whole works.

The big growth market is twenty-five to thirty-four-year-olds. My bet is that that will be true in your service area within the next five years. Sixty-five-year-olds are another big growth group. The eighteen-year-olds just are not going to grow; they are going to decline. But two sectors are growing.

Therefore, you can think of pitching your education to meet the significant needs of these particular adults.

To summarize the population trend, in 1965 we were a youth culture. Anything you wanted to sell to youth was fine. By 1975 the birth decline had begun to hit and we saw that what we had was an age lump. Europe had a baby boom after World War II, but it lasted only three years. Europeans still say that our baby boom was obscene and immoral because it went on for fifteen years. That is the funny thing. We just could not stop having babies during those years. Now we are tapering off; we are downsizing, as many refer to it. We realize that the services we provide to this group will not need to be provided. There will never be enough condominiums for this group as they move into early middle age. Getting into the job market is really going to be very tough. As they get older, which they will, it will still be like the mouse and the snake. You will find that there will not be enough mid-career training centers for them, and there probably will not be enough funeral homes when they reach that part of the life cycle. This group distorts the economic system. The problems for planning for this group are very significant.

By 1985 the best judgment we have, and it is not very good, is that there will be a tiny population increase up to age four, and if we want to we can bet our whole strategy on that little group. That is, we can tell legislators not to close schools, but to wait until that group gets old enough to go to college. At

that time we will need the schools. If you want to develop your strategy that way, I guess that is your privilege. I guess my hope would be that you think of some other way to do it. The real question, I think, for the next few years is the degree to which we can count on an expanded population. I would suggest that you not limit yourselves to concerns for eighteen-year-olds.

We all know that the number of women in the work force with school-age children is now 53 percent. That is a large new market. Working women have one thing in common, an enormous increase in their desire for education. This represents a very large and substantial new market. The second new market is the multiple-earner family in which both the husband and wife work. There are two different kinds of multiple-earner families: 1) under age twenty-five in which the wife works because she has to, and 2) the woman who works for self-fulfillment, because she may be a professional and make a lot of money. So, the multiple-earner family, by 1985 or so, is going to be a dominant market. The educational needs of the multiple-earner family will represent 65 percent of consumer demand.

When I was eighteen I was given Macbeth to read. When I was eighteen in Minnesota, what I knew about Macbeth could be put on the head of a pin. However, having been head of a federal agency, give me a play to read about greed, murder, lust, and death, and now I am prepared. I can deal with that at the present

time. So the new players in the higher education game are the ones we are going to have to look at rather seriously. Colleges and universities enroll about 11.5 million students, and we have (according to the National Center for Educational Statistics) 17 million American adults who are studying somewhere else--11.5 million for us, 17 million for them (see p. 30). Where are they and what are they doing? Here is what they are doing. Half of them are in occupational training programs that are run by noncolleges. Remember, that is half of 17 million people, a sizable chunk. One-fourth are in general education. If we could get one-half of that one-fourth to go back to college classes, all of our enrollment decline problems could be solved. There are more than enough adults already studying to compensate for our enrollment problems. The fact is, though, that they are studying some place else, and they like it. So the trick is going to be to lure them away from the place they are studying, toward where we want them to study. Here is a good grocery list of all the places in American life where people are engaged in systematic study past high school (see p. 31). Note that it adds up to 58 million Americans. These are people who are systematically studying something in one of many environments. Now, the question for the future, in my mind, is how do we put all these environments together?

Let me show you two things about industry. According to the Conference Board, industry spent

about $2 billion on their own educational system so that their people can go to college. That is money they spent in-house, not tuition money. There are now 400 businesses that have a building on their site and on the front of the building is the word college, university, institute, or center. They have built their own educational establishment within the business and they have done it for good reasons as we shall see. ASTD estimates that American businesses spend $100 billion (I think that is a little high, but $20 billion is easily documented) on their own systems of education. AT&T is a big outfit. It employs a million workers, but its education budget, astonishingly enough, is $700 million. That is what AT&T spends a year on education! The MIT budget, just for comparative purposes, is about $220 million. AT&T employs 2,000 Ph.D.'s on its staff. I would normally assume those were the "inferior" Ph.D.'s who cannot work at Harvard, Princeton, or Berkeley, but that is not true. Last year a Bell Lab physicist won the Nobel Prize for physics, not for telephone switching systems, but for developing a new way of looking at the origins of the galaxy through heat signals that come from distant parts of our galaxy. You can do anything you want with AT&T, but you cannot ignore it. You cannot dismiss AT&T as being irrelevant to your purposes. At some time I hope you formulate an opinion about them, but please do not dismiss them. Much of what they are doing and what they represent is

very much in line with what you do and what you represent.

One of the big issues, as far as we are concerned, is how do we relate these various players to each other? One of the ways we do that is through continuing education laws because they force us to come to some terms with each other. If you are interested in that, think about playing a game called the exchange game. When you play the game, there are things that we have and there are things that they have, and we would like to exchange. Many businesses are playing exchange games with each other and occasionally with colleges and universities as well. All that is to suggest, then, is what you may end up doing in the next few years, or maybe you are doing it now, is to engage in a systematic look at the market. That is, who buys our services, why, and how can we encourage more of them to do it? The big step in marketing is position, and the problem here is knowing our competition. Much of the time your competition is not a university or a college. The issue gets very difficult. For those colleges that can do positioning, you do get this marvelous confidence that comes from knowing the range of services you want to offer and the niche you would like to occupy given the competition. Then you can say, this is where we want to move, and you can make the institution work to get there. So marketing and positioning are clearly a couple of things that will happen as a result of this kind of environment.

I also think there will be a greater concern with retention studies and how you can have your students stay longer and do the things that they would like to do. There are some astonishing parallels on the issue of retention and we know a lot more than we thought we did about who stays and who leaves. The latest thinking I am familiar with in this area is beginning to make sense. Some students ought to leave for a while, and if your counselors are telling everybody to stay under any circumstances, you are probably not helping them a bit. There are people who should leave. If college does not meet their current needs, if it is beyond their current capability, or if they figure out what they want without the degree, they ought to leave. They also ought to come back at some time in the future. Our exit interviews right now are like something that happens in mortuary science. We say to a person leaving our institution, "John, it is too bad that you are about to be amputated at the neck, we shall never be able to think again that we did our best with you, but I hope you enjoy yourself out there --drink a lot of beer and watch a lot of television." These interviews are one of the worst things we do. It would be so much better if in the exit interview you could set up guidelines for when the person ought to think about coming back to your institution or somewhere else. If you could support your student's decision to stop back, you could make an offer of future help, such as, "Mary, if you get these four things done to a level that satisfies you,

why don't you come back and we shall talk about some kind of college you should go to then?" You find that two things happen. First, a student may return and complete the program (a large number do, either at your place or some other place); and second, the student may start recommending your college to other people. Both of these are highly desirable outcomes.

Another result of the kinds of adult education that we are getting into now is that we are learning a lot about what adults really want. Many of them want noninstructional services. They may want a course, but they do not want a degree. Are you prepared to give them just the course? They want to assess their personal competencies. They want to get strengths and weaknesses and skills and subjects sorted out. They just want to find out what is going on in the area. It is amazing how few people know. One out of five express a need for personal counseling. That does not mean psychiatry; it just means they need a little help somewhere along the line. That is an enormous set of services that somebody can provide tomorrow, but, I think, not in the organizational patterns we are used to. In the future, people will be referred to diagnostic centers where their needs and wants can be sorted out and they can be helped to set up learning goals for themselves after which they will be referred on. I know of no college, at the moment, doing all of that. That is clearly an agenda for adult education that would link education and work. The question, I think, is how are we going to deal with all these

other folks who do our job? I do not have any answer for you as to how you ought to do that, but it does seem to be one of the most important and exciting problems that educators have ever worked on.

Let me close with a metaphor which may help explain some of these things. There are two ways to organize the delivery of food to human beings. The first is probably the one we are most familiar with--it is a straight cafeteria model, but to a systems person, it is different. It is a linear, one-way bounded system. What does that mean? Try getting to the front of a cafeteria line and deciding that you do not want those rutabagas that you picked, go back against the line and hand the rutabagas back. People have been killed for doing just that. The line encourages one-shot decision making with no chance for reversal. There is another way of providing food for people, but the sequence of choice is determined by the buyer and not the seller. That makes all the difference. It is a system that is free and flows around when there is a blockage. This system is about 20 percent more efficient than the other one. When this was presented to college cafeteria managers, their response to it was interesting. They said, "It's immoral." When asked why they felt that way, they said that desserts are always put at the end. This forces people to buy the good, healthy stuff so that when they get to the desserts, they only have room for one. For them it was clear, good versus evil, mashed potatoes and vegetables are good, and the

stuff with whipped cream on top is evil. They may be right.

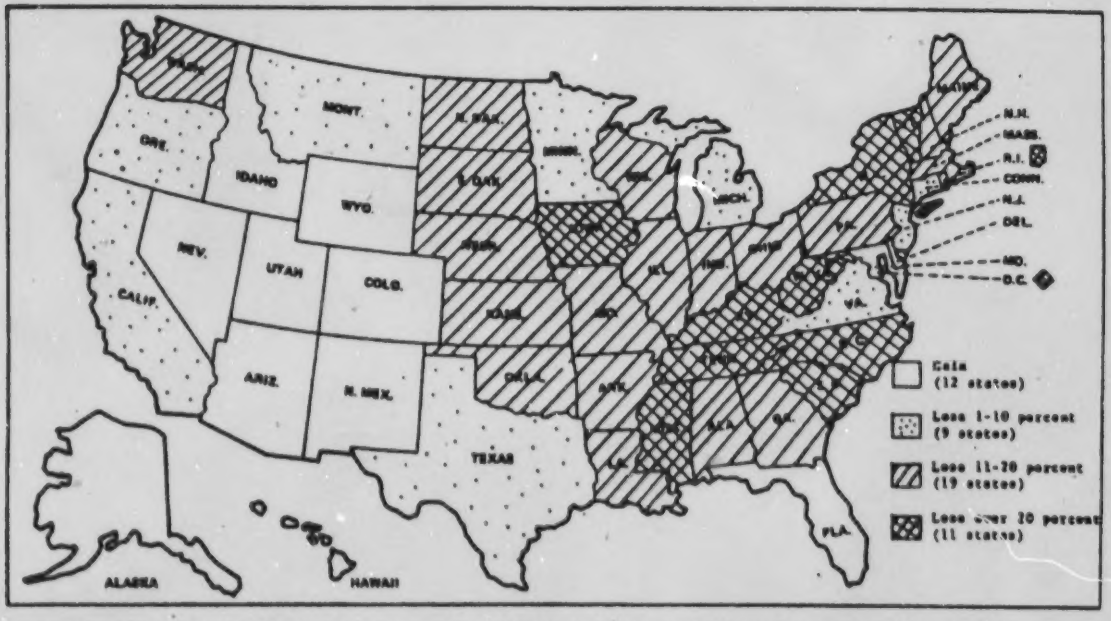
But education is also organized in linear fashion. When taking English 101, 201, 301, and 401, you cannot get into 401 unless you have had 301. We do not care if your instructor says it is okay, or if you can demonstrate that you know the content of 301. ("We have standards here.") You are expected to move from freshman to sophomore to junior to senior year, and if you take a semester off, it means that you are either on drugs, or your girl friend is pregnant. Leaving school for a term is an immoral act. The moral student goes straight through; taking off is an admission that you are in the hands of Satan. That may seem funny, but talk to a registrar sometime. Freshman, sophomore, junior, senior--Assistant Professor, Associate Professor, Full Professor: you name it, that is the way we organize higher education. On the other hand, our lives are much less linear. My parents had a kind of life in which they went to school, then they went to work, and then they had two years before they expired when they could have a good time--retirement. Today we mix these all up. We have work experience programs in schools for twelve year-olds in violation of the child labor laws. We also have programs for forty-year-old workaholics so that they will have some leisure time instead of killing themselves on the job. We are beginning to mix up the services by age.

The big issue of the next decade, at least for me, is how to integrate, organize, and coordinate that rate of human services in such a way that we serve the needs of the people in the community who are at the center of the organizational chart, not at the bottom. If there is a way to do that, that is a very intriguing and important agenda for the next five to ten years. We are not going to be creating too many new innovative institutions like Empire State and Evergreen State in the next decade. It is too expensive. What we will do, and I find this fascinating, is create some very interesting and innovative linkages across all of these community service agencies. Now that sounds like a very exciting agenda. If I were you, I would roll up my sleeves and be very eager to get started on it. Indeed, when I look around at the "prophets of gloom" today who tell me that education is sort of obsolete and who ask "Why are you interested in that stuff anyway?"--I reply that I have never seen a more exciting and interesting time for people in education. You will be talking to other educators who work in funny places. They may use peculiar words and may eat funny things for breakfast. They probably got their degrees at the same place you did, but they have made a different set of life commitments. Nonetheless, they are indeed educators. To become familiar with them is going to be helpful and educational for you. So, as you look at the next decade, instead of thinking of it simply as a crisis, you might want to refer to the Japanese definition of

crisis which translates into a threatening opportunity.

FIGURE 1

PROJECTED CHANGES IN THE 18-YEAR-OLD POPULATION: 1975-85



Note: These are projected changes in the number of 18-year-olds in the 1985 population compared with the 1975 figure. At the national level, there are expected to be 12 percent fewer 18-year-olds in 1985 than in 1975.

Sources: Policy Analysis Service, American Council on Education based on U.S. Bureau of the Census, Current Population Reports, P-25 Series.

Table 1

ENROLLMENT IN "HIGHER EDUCATION" ACTIVITY*
(n = 17 Million Adults)

	Interest Area	Percent
1.	Occupational Training	57.3
2.	General Education	24.8
3.	Social and Recreational Courses	12.0
4.	Personal and Family Living	11.7
5.	Community Issues	11.5

*NOTE: The total is over 100 percent due to multiple enrollments.

Source: The National Center for Educational Statistics

Table 2

WHO IS LEARNING WHAT? WHERE?

Location	Number
Agricultural Extension	12.0 Million
Community Organizations	7.4 Million
Business and Industry	5.8 Million
Professional Associations	5.5 Million
Part-Time College	5.3 Million
City Recreation	5.0 Million
Churches, Synagogues	3.3 Million
College and University Extension	3.3 Million
Government Services	3.1 Million
Public School Adult Programs	1.8 Million
Federal Manpower Programs	1.7 Million
Armed Forces	1.5 Million
Graduate and Professional	1.5 Million
Trade Unions	.6 Million
Community Education	.5 Million
Free Universities	.2 Million
Total	58.4 Million
In Schools	12.4 Million
Nonschool Settings	46.0 Million

Source: College Board, New Directions for a Learning Society, 1978.

Table 3

STATES WITH CONTINUING EDUCATION REQUIREMENTS
(As of September, 1977)

Name	Percent
Certified Public Accountants	23
Dentists	8
Lawyers	7
Nurses	7
Nursing Home Administrators	37
Optometrists	45
Pharmacists	14
Physicians	11
Real Estate Agents	11
Social Workers	6
Veterinarians	18
Teachers	50

RETRAINING PROGRAMS FOR THE HANDICAPPED ADULT

Ms. Margaret (Peg) Pyne

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Let me begin by extending my thanks to Penn State, the men and women involved in continuing education, and Dr. Jerry Wircenski for inviting me to be here with you today. The scheduling of this meeting is significant for it precedes by only several days National Employ the Handicapped Week. I would like to share with you the Presidential Proclamation which announces these important days.

> The past decade has been marked by significant advances for handicapped people. Such laws as the Rehabilitation Act of 1973 protect many handicapped individuals from discrimination in employment and services. Handicapped workers have made great progress in entering the job market, and those already in the labor force are moving up to better jobs. More of our nation's buildings and public transportation systems are being made accessible. Many handicapped individuals have been moving out of institutions into homes, apartments, and community facilities which facilitate independent living. As handicapped individuals move into the mainstream of society, more and more of their fellow citizens are overcoming their prejudices and seeing handicapped people as individuals.
>
> Yet much remains to be done. Many qualified people, including disabled veterans, are

unemployed or underemployed and others are not promoted because of discriminatory attitudes rather than an inability to perform. Many buildings still have thoughtless architectural barriers that prevent handicapped persons from getting jobs and education. Public transportation is still not available to all handicapped individuals.

This country needs the creativity, skill, and participation of all our citizens. To affirm our commitment to equality for the handicapped members of our society, the Congress, by joint resolution of August 11, 1945, as amended, has called for the designation of the first full week in October each year as National Employ the Handicapped Week.

Now, therefore, I, Jimmy Carter, President of the United States of America, do hereby designate the week beginning on October 7, 1979, as National Employ the Handicapped Week. I urge all Governors, Mayors, other public officials, leaders in business and labor, and private citizens at all levels of responsibility to help remove all barriers which prevent handicapped individuals from obtaining productive employment and from participating fully in other aspects of American life.

Ah, that life's opportunities would or could be as available to people with handicapping conditions as some of those words imply. To borrow from Virginia Slims, "We've come a long way, Baby!"--but we still have a long way to go. The last ten years of federal legislation have initiated dramatic improvements in educational, employment, and residential standards of service. Elementary and secondary schools have opened their doors much wider to students with special needs.

Colleges and other public programs evidence increased accessibility to programs and buildings. Yet the consumer voice of the handicapped community (such as the American Coalition of Citizens with Disability and the National Association for Retarded Citizens) is getting louder and sharper. Many people are pleased with changes made in their own home community but they remind us that many significant problems still exist. Our handicapped peers chastise us to not overlook areas still in need of improvement or development so that a greater sense of equality might be in place for the next generation.

I have worked in this field for ten short years. My experiences have permitted me to observe programs in approximately nine countries. I have worked in three state agencies and have participated actively in a number of professional and consumer organizations. During the past five years I have focused my attention on the needs of handicapped people in vocational and postsecondary education. I respect the fact that there are basic problems of money, time, and a multiplicity of educational and administrative concerns which harass all organizations and businesses. Yet I am a fundamental believer that the primary tool necessary to create educational and social opportunity is commitment.

I learned early lessons in social change in the small town of Hopkinton, Massachusetts, where I grew up. Once in a while I would be called upon to collect money for a cause or project. The afternoon's efforts

often produced meager results. Yet, let there be a housefire or other event which underscored human need and the town would respond in total force. Someone would offer an apartment; cash collections would result in a bank account; new wardrobes of clothes would appear. PEOPLE POWER! It worked. I believe it still works.

But my years of training and experience acknowledge a problem I first heard articulated by a professional colleague of mine in Washington, D.C., Dr. Bill Halloran. Unlike the hometown approach of "pitching in," there is evidenced in this country a problem of "guilds"--and the isolation and separation of knowledge which results. As professional workers, we are trained frequently in a tight systemic mode. We are members of the special education guild, the vocational education guild, the CETA guild, the private school guild, the adult education guild, the rehabilitation guild, the social work guild--the list goes on; yet, too infrequently do we go to the "back fence," stand on our tiptoes and look over the wall to learn more about what our neghbor guilds are doing. In this day and age of tight resources, I posit that collaboration of guild members is vital to meet the still outstanding needs of our handicapped neighbors. The people we intend to serve are not so easily fragmented. At one time they may have special education needs, rehabilitation needs, employment needs, training and retraining needs.

A month ago I had the opportunity to initiate a program at a community college north of Boston to serve one particular group of students. Through the Division of Continuing Education and Community Services (with a grant from the Massachusetts Developmental Disabilities Council) we will begin to provide adult education courses for people considered to be mentally retarded or who have other developmental disabilities. Preliminary investigation has fascinated me. I find that not only is the community college a vital place to provide such postsecondary training, but so are almost a dozen other education providers. Many other organizations can be locations for additional programs. They include, but are not limited to:

-- four-year colleges, continuing education divisions;
-- local education agencies, night school, adult basic education;
-- vocational-technical schools, adult education programs;
-- private technical and trade schools;
-- sheltered workshops, remedial education programs;
-- special education collaboratives;
-- private organizations such as horticultural societies;
-- trade unions;
-- voluntary education associations, Literacy Volunteers of America.

Noting the theme for this conference, New Horizons, and the theme of my remarks, Retraining Programs for the Handicapped Adult, I suggest that many handicapped adults need primary training as much as they need retraining. Many of our people grew up in a time when special education was still in the school or church basement, at a time when strong secondary programs were available only in a handful of places in each state. The bulk of work training was deposited on the doorstep of the vocational rehabilitation agency--an agency in most states with too little funding, too many clients, and mandated time limitations for client evaluation and training. I suspect there is not one of you in the room who is not familiar with the Rehabilitation Act of 1973, as amended, and the perceived opportunity it holds for handicapped individuals. Yet, in a variety of professional and skill areas, it is virtually impossible to find "qualified persons" who are handicapped. Our earlier education system rarely ferreted the handicapped student into work training programs which actually matched community employment needs with the student. Thinking about our guilds, Department of Labor people and some vocational educators knew about community employment needs, but the special educator, working with the person who was retarded or who had another kind of handicap, probably was, and is, reasonably unaware of jobs, employment trends, shifts in the labor force, and emerging technologies. Even today at the secondary school level, there is a

surprising lack of creativity in job training. We have institutionalized particular workers into particular jobs. Lots of teenagers who are mentally retarded are taught to be hotel/motel workers, even in areas where there are not a lot of motels or hotels! My dear friend, Donna Eggert, just a few short years ago was funnelled into a secretarial program to be trained as "the typist" because she was blind and "she should have a job where she does not have to move around a whole lot." Her disability was emphasized, not her ability. Yet, her self-taught articulation skills have her now serving as a very effective consultant delivering precise testimony before the United States Congress.

I believe that those of us who bear some responsibility for preemployment training, especially with the client/student who is handicapped, must be committed to unearthing the unique talents and interests of the future worker, and we must be equally committed to broadening our own image of the variety of jobs such individuals might choose to perform. Our challenge is to diversify occupational learning opportunities for the handicapped and nonhandicapped to learn together. Postsecondary education has not been unresponsive to this; it has adapted and included students with unique needs all along, but such programming has not been universal and available to all students who can benefit from it. We are called upon now to include in our program planning, to find ways to reach out, and to

market to adults with different ranges of need and skill.

How can that be accomplished? If we are unsophisticated in this area, where and how can we find information?

1. Learn more about people with special needs by becoming involved in consumer groups.
   -- Acquire professional membership in the National Rehabilitation Association, the National Association for Retarded Citizens, the American Coalition of Citizens with Disability.
2. Visit people and programs in your area which serve handicapped people--high school vocational/special education programs, a sheltered workshop. Find out who the people are, what their needs are, what courses or training programs interest them.
3. Put yourself on the many free mailing lists from the federal government and other resources which publish monthly or quarterly newsletters:
   -- the President's Committee on Employment of the Handicapped,
   -- the President's Committee on Mental Retardation,
   -- the Office of Handicapped Individuals (Programs for the Handicapped is a particularly informative newsletter published by OHI).

4. "Look over the fence." Commit one or two hours a week in the library reviewing periodicals published for or about the handicapped person.
5. Write or telephone other regions of the country to obtain information about programs you can replicate in your school or learning center.
6. Develop advertising methods which can reach out to people with handicaps. Most state associations for the blind have an "800" line which gives weekly announcements to people who are print handicapped; TV announcements can now be modified with print for the person who has a vision loss.
7. Check your mini-conference or short-course design to assure that programs are accessible to the handicapped and SAY THAT on the flier ("This conference is accessible to the physically handicapped," "With one week's notice we will arrange to have an interpreter for the deaf present," "For people with vision loss or impairment, we have the agenda/ meeting notes available on cassette").
8. Include handicapped people in your planning sessions and on your advisory committees.
9. Work with neighborhood consumer organizations (potential students) to see if there are special courses which should be developed to meet needs: for example, "Management training for the handicapped worker," "Orienting the nondisabled worker to the handicapped person's daily

environment," "New learning technologies for the handicapped student."

10. Evaluate existing courses to see if they are accessible now to a handicapped student, or might be with limited modifications.
11. Work with your faculty to better understand, or describe, techniques successful for the handicapped learner.
12. If you start a special program or resource center, take the time to write up your successes as well as your failures. It is important to learn from others who have tried programs in other locations (one way we shall do this in Project ACCESS is to develop a "how to" manual which will list items like financial aid, transportation, etc.).
13. Develop a resource library on current laws, federal regulations, and grant-related issues.
14. Employ handicapped people within your own office or organization to show that your commitment is more than "lip service" or "bottom-line affirmative action."
15. If this is a first encounter for you or your organization, remember to be reasonable. In many respects the handicapped person has been oversold. He or she is as human as the next person. Some succeed, some fail. Some are punctual, some never are. Tempted as we might be, do not judge a class of people by the behavior of one or two. Know that if it is a first-time effort for you,

it might well be a first-time effort for the person or persons with whom you are working. Fear, misapprehension, complex extraneous factors might be at work on both sides. Leave room for dialogue--for studying reasons why some program elements fail and others succeed; why some people succeed and others do not.

In a way, time is on our side. Better educational methods, earlier remediation with the youngest of children, and widespread special education reform (P.L. 94-142, Education for Handicapped Children) will bring us better-trained adults with special education needs. The public is clearly more informed about such programs than earlier generations. "Integration" is now commonly used in programs for limited-English-speaking people, racially different people. The handicapped student population is simply "falling in."

However, the older adult who may have been handicapped since birth, or who in adolescence or later years became disabled, may be in need of real commitment by the postsecondary educational system. Rehabilitation agencies are restricted in what they can provide and when. Education and training agencies which serve the general public are the only level of service providers which can be tapped periodically for continuing education for handicapped adults. It is here that personal development, enrichment, and skill building can be combined to reshape "self-concept [and move a person] from one of being a dependent

personality toward one of being a self-directed human being" (Knowles 1970).

THAT IS WHAT WE ARE ABOUT!

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Highlights of Discussion on Retraining Programs for the Handicapped Adult

1. There is a new population available to postsecondary education. With the passing of Public Law (P.L.) 94-142 and P.L. 94-482, handicapped people will begin to seek out postsecondary education.
2. There is a need for articulation between postsecondary education and vocational education as it relates to the handicapped. P.L. 94-142, "Education of all Handicapped Children," requires that educators take responsibility for the handicapped individual's education until he or she reaches twenty-one years of age.
3. We should start to think about Individualized Education Plans (I.E.P.'s) for handicapped adults, and involve handicapped individuals in planning programs. Presently, the institutions determine what jobs are available to the handicapped and then try to fit the people into the jobs.
4. Institutions must find ways to meet the needs of the handicapped population.
5. There is no clear interpretation of Section 504 (the Rehabilitation Act of 1973) requiring that reasonable accommodations be available for handicapped individuals.
6. We have to be more responsible and committed to making handicapped persons more responsible to the community.

7. Section 504 is not difficult to implement. Most people are afraid of handicapped people because they do not understand them. Handicapped people learn in the same manner that everyone else learns.
8. Placement of handicapped people outside of diversified occupations is higher than any other group.
9. We can integrate handicapped adults and put them in day schools with the regular Area Vocational Technical School (AVTS) program.
10. One benefit of night school programs is that they put handicapped adults in classes with their peers.
11. Altoona AVTS has a program in which handicapped adults attend classes during the regular school day, but in separate areas.
12. Another school brings handicapped adults into the same academic classroom with the regular students, until the teacher or some other person identifies the student to a particular shop area.
13. It is fine to put handicapped people into commercial art, but what about plumbing and other such areas?
14. Most job opportunities are available in trades such as plumbing. Why not train handicapped people in these areas?
15. Handicapped people are only labeled while they are in the educational system. People outside of

education do not generally label individuals. Labels should be eliminated.

16. There are a lot of jobs still unexplored, therefore, we are excluding people from those areas.
17. Can handicapped people really cope with the everyday environment? Are discussions about handicapped people limited to those isolated instances where success has occurred?
18. Handicapped people have the same individual needs as everyone else does. Not every person is meant to be able to do every job. Every handicapped individual cannot be "dumped" into the mainstream, but those who can be, should be.
19. Harrisburg will not do anything about Section 504 until forced to. The people must get together and force the government to do something. Articulation is necessary to find out exactly what is being done.
20. What happens to handicapped students after they reach the age of twenty-one in a special institution and have to go out into the real world? If we provide them with goals and help them meet their goals while they are in our institutions, they will do well out in the world.
21. "Mainstreaming" needs to be defined.
22. There are community service agencies willing to provide free or low cost support services for handicapped students.

23. It costs $15,000 per year to institutionalize a person and approximately $7,000 to educate him or her.
24. The battle now is changing the public's attitudes and commitments.

UPGRADING PROGRAMS IN POSTSECONDARY OCCUPATIONAL EDUCATION

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One could define postsecondary education as any education or training which prepares a student beyond the high school age for a specific occupation or related group of occupations. This definition could include everything from a high school typing class up through and including professional schools such as medical and law schools. I would like to address myself to education for those occupations which require training involving less than the baccalaureate degree.

The preparation for a particular occupation generally involves learning certain manual or manipulative skills plus acquiring an organized body of knowledge. The more complex the occupation, the larger is this body of knowledge which must be acquired.

Traditionally, individuals have learned occupations in a number of ways--by learning on the job, by apprenticeship (formal or informal), or by attending an educational institution. As occupations have become more complex, there has been a greater tendency to learn them in schools rather than on the job or by apprenticeship. This has led to the proliferation of

specialized training institutions, mostly private, and a large expansion of occupational training in public educational institutions at all levels. In response to the need for career education, several systems of delivery of postsecondary education have developed simultaneously within the Commonwealth. We can identify at least five such systems.

1. Vocational or Occupational Education. This encompasses primarily what is generally referred to as vocational-technical education either in area vocational-technical high schools or in comprehensive high schools which offer vocational-technical training. Growth in this area has been spurred by the availability of federal funds for the construction and equipping of vocational-technical schools so that in the last ten years we have seen many AVTS schools established in the Commonwealth. Primarily the vocational-technical high schools provide education for individuals who are still in high school. Their occupational education is combined with their general education. One of the difficulties with this approach is that it builds into the occupational career training all of the rigidities which are necessarily present in the secondary school system in terms of mandated hours of attendance, days of attendance, areas of attendance, reimbursement formulas, certification requirements for teachers, and other strictures which limit the flexibility of the system and its ability to

serve the needs of the students. Most departments within the vocational-technical high schools operate considerably below the optimum levels of enrollment required to maintain effective teaching in highly specialized subjects. The fact that these schools are tied to their own attendance districts makes it difficult to specialize in any particular field, for if a school were to achieve excellence in a particular field, students from other areas of the state could not take advantage of this achievement. Possibly the best function of the AVTS is to introduce students to occupational areas in which they might wish to further their education after leaving high school. Vocational-technical education has received tremendous funding the last few years. There is some question whether all the facilities are being utilized fully and whether full utilization can realistically be expected.

2. Community Colleges. A major purpose of the Community College Act of 1966 was to provide within the community colleges provision for training individuals for occupations. Indeed, the first act mandated that a fixed percentage of the colleges' activities were to be devoted to training people in terminal programs for specific occupations. Shortly thereafter, it appeared that the real demand of these schools was for transfer programs in which the student could complete the freshman and sophomore years at the

community college, and then go on to a four-year institution. This led to amendments to the law removing the mandatory provision for occupational education. It appears currently that the community colleges are making a very minimal contribution to the supply of individuals training for specific occupations within the Commonwealth of Pennsylvania.

3. The Pennsylvania State University Branch Campuses. When the branch campus system of The Pennsylvania State University was established, one of its major thrusts was intended to be the training of individuals for semiprofessional positions, primarily engineering technicians and draftsmen. This system has been in operation for a substantial amount of time, and several new locations have been established within the last few years. Again, these institutions are funded heavily through a combination of federal and state appropriations. Each of the Penn State branch campuses offers at least one or two programs for technicians and there are eighteen locations at present.

4. Specially Federally Funded Programs. Within the past few years dozens of new programs have been established within the Commonwealth primarily operating with federal funds through the Comprehensive Employment and Training Act (CETA). These funds have been utilized to train people within the normal educational structure; but many

other projects have been established through ad hoc agencies outside the supervision of the Department of Education and other existing educational agencies. This is not to say that these organizations are good or bad, but there is some question about the effectiveness of these programs.

5. Licensed Private Schools. We now come to the area best known to me--the role played by licensed private trade and technical schools of which about 105 are licensed private business schools. These schools represent a tremendous resource for career education. In fact, it appears that most of the meaningful career education which has and is taking place occurs in the Commonwealth's licensed private schools. It is estimated that approximately 35,000 students are enrolled in these schools. Their enrollment continues to be substantial even though alternative public institutions are available. There must be some reason why individuals continue to attend private schools when they could attend community colleges or other public institutions at substantially lower tuition rates. It seems these individuals find that private schools better serve their educational objectives than the other available institutions.

It might be well to explore what distinguishes the private institutions from the public institutions

with ostensibly similar objectives. First, the most readily identifiable characteristic of private schools generally is specialization. Most private schools offer a single program or a small group of closely related programs. The training is highly job oriented and provides primarily the exact skills and knowledge necessary to perform a particular job. The schools are generally oriented to a particular industry rather than to the educational structure as a whole, and many of them serve the national rather than local job market.

Personnel people come from all over the country to recruit from the private schools in Pennsylvania. Some private schools are very small; some are among the largest of their type in the country. For instance, Pennsylvania has probably the largest aviation trades school in the United States. Many are unique in their field. We have one of the few schools of gunsmithing. Many of our privte schools have been in business for several years, and at least one traces its history back almost one hundred years. It is possibly this variety of course offerings and programs tailored to the specific occupational needs of students which attracts students to these institutions.

This conclusion has been supported by numerous studies. I would like to cite the studies of Dr. Kenneth Hoyt, Director, Office of Career Education, HEW, Washington, D.C., when he headed the Specially Oriented Student Study Group; the research of Dr. Harvey Belitsky under the sponsorship of the Upjohn

Foundation which led to the publication of "Private Vocational Schools and Their Students," and a study by the Stanford Research Institute in the same field. All of these studies seem to indicate that students choose private career schools because they are the most direct route to employment in their chosen field.

As illustrated by the above, we have in Pennsylvania a multi- or nonsystem of delivery of career postsecondary occupational education with several simultaneous structures with apparently similar objectives, but taking different routes. There is practically no communication between these systems. It seems as though we are trying to go some place by building several parallel railroads, each with a different gauge, different controls, and different signals. It would seem to make sense to arrange this "nonsystem" into a comprehensive system in which each segment would perform the function it performs best, and in which students could move from one element of the system to the other as their educational needs require.

The Commonwealth of Pennsylvania can probably afford to have a good system of career education, but it is unlikely that it can afford to have several systems duplicating facilities and competing for students.

It has been pointed out that although 80 percent of the individuals entering the labor market need some career education, not enough are getting it. In view of the large number of programs available, one wonders

why more people are not being guided in this direction. Part of the problem is undoubtedly due to the perceived low status associated with this type of education. We have too long believed that the only worthwhile education is one which terminates with the baccalaureate degree. Hopefully, we are now seeing a reaction to this attitude. However, the counseling structure of the secondary school is still largely oriented to the student who plans to go to a four-year college. This is not necessarily criticism of the counselors, but also reflects the attitudes of the students and their parents.

On the other hand, if only 20 percent of our secondary school graduates really need a four-year education, it would seem that the counseling system should be restructured to put more emphasis on other forms of postsecondary education. At the present time, we have 70 percent of the counseling effort benefiting less than 40 percent of the high school graduates. To correct this, specific counseling personnel should be designated in each high school to deal with those students who are not college bound and who need postsecondary occupational training. Possibly these counselors should be drawn from industry or business rather than the educational structure itself.

The Commonwealth of Pennsylvania is now spending millions of dollars a year in the area of postsecondary education. By and large, the vast majority of these funds are being expended for students and institutions in baccalaureate degree and graduate level

programs. Only a tiny fraction is used for programs of less than four years. Of this fraction of the total, most of the state funds now go to specific institutions, the community colleges, and The Pennyslvania State University branch campuses. Only a small fraction is available to students in approximately 400 specialized training institutions. Yet, it can be demonstrated that more is being accomplished in these institutions than in the state-funded systems. A complete review of the way the Commonwealth of Pennsylvania distributes its funds for postsecondary education is long overdue.

It would appear that one horse is pulling the plow and the other horses are getting all the oats. We badly need a fair system of funding. To cite a single instance, it does not seem sensible to spend millions of dollars per year to educate doctors while spending so little to educate nurses, technicians, and other ancillary medical personnel.

In this country it generally has been the tradition to load many tasks onto the public education system, some of which might be better done outside the system. We have used them to provide the basic educational requirements of the population. We are, at this time, apparently looking to the public school system to solve the problem of bringing our racial minorities into the mainstream of American life.

It does not seem to me that the public educational system should be loaded with additional responsibilities in the area of postsecondary education. Up

to now, most of the efforts in this regard have resulted only in the creation of new facilities. No matter how many facilities are created, they cannot duplicate all the existing programs available in private schools. In addition, the restrictions under which public institutions operate make it difficult for them to provide the services which are needed. It would seem that if the Commonwealth wishes to make an additional contribution to career education, it should consider seriously the purchase of those services from the organizations which specialize in delivering them, and which can demonstrate competency. After all, if the Commonwealth needed automobiles it would not build automobile factories! At present, it appears that we have all the facilities necessary within the Commonwealth to provide a meaningful career education for each individual who desires it, providing the guidance is available to the student and funding is available to implement the services they need.

Perhaps the role of the public schools should be reexamined to see if they are providing the basics necessary to enable the student to absorb a required specialized education. We have heard many people say that nobody should leave school without a salable skill. I submit to you that the most salable skill an individual can have in the twentieth century is the ability to communicate in the English language. It is difficult to see how an educational system which is having difficulty delivering such a basic skill will

be able to undertake delivering competency in all the highly specialized areas of postsecondary training.

Highlights of Discussion on Upgrading Programs in Postsecondary Occupational Education

1. The community college systems should not be considered antithetical to, but in harmony with proprietary schools.
2. The missions of the community colleges and proprietary schools are different. Proprietary schools specialize in a particular program, while community colleges react to the needs of the local community.
3. Competition between proprietary schools and community colleges is healthy.
4. Active public relations and strong placement programs of proprietary schools are assets to this type of institution.
5. There is a need to overhaul completely the funding of postsecondary education from all sources of government. Of particular interest is that money which applies to vocational-occupational education.
6. Priorities for funding need to be directed toward the support of existing systems, rather than the creation of exemplary programs.
7. Articulation between secondary and postsecondary levels of vocational-occupational education is being deterred because of limitations placed on

vocational education personnel and their narrow view of the career ladder concept.

8. Breaking down artificial barriers in vocational-occupational education through a career ladder concept would assist in the upgrading of occupational education.
9. Various special interest groups provide barriers to articulation.
10. More utilization of business and industrial facilities by educators could help upgrade occupational education.
11. Accountability in public school programs needs upgrading, such as placement and follow up of graduates. Proprietary schools would not exist without fulfilling this responsibility.
12. Contracting of duplicated services between post-secondary schools could upgrade present programs at lower costs.
13. Determining local labor market needs is a major problem in attempting to upgrade current occupational education programs. Large industries have the expertise to devote to this type of activity, but the resources to provide this information are not available in smaller industries.
14. Upgrading the technological knowledge of faculty is necessary for upgrading occupational education. The financial resources for inservice training is more readily available in industry. More emphasis needs to be placed on the advancement of technological knowledge in education.

A CONCEPTUAL FRAMEWORK FOR OCCUPATIONAL EDUCATION COMMUNITY SERVICE PROGRAMS

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In 1975, the Sixth Annual Pennsylvania Conference on Postsecondary Occupational Education dealt with continuing and adult education in vocational education. At that conference Bill Homisak, who was then the Director of the Community Services Center at Williamsport Area Community College, began his remarks by stating, "Community Services and Continuing Education are undoubtedly the most romantic aspect of all postsecondary higher education" (Homisak 1975, p. 44). I sincerely hope that Bill's love affair with community services and continuing education is still going as strong as it was in 1975. Certainly, the relationship between community service programs and our schools and colleges is more than a mere flirtation. In fact, it is my prediction that in the future this relationship will become an inseparable marriage.

The purpose of this presentation is to provide a conceptual framework for the involvement of occupational educators in community service programs of educational institutions. Beginning with a definition of community service programs and a statement of their importance in occupational education, this paper

includes a discussion of the criteria necessary for successful community service programs, and a description of several types of these programs. Included also will be a discussion of some of the barriers confronted in the development of occupationally oriented community service programs and a brief view of their future.

The Definition of Community Service Programs

This paper is based on the assumption that the planning and management of occupational education community service programs will become increasingly important to us and our communities, and should therefore be given as much thought and consideration as formal and traditional academic programs. One definition of community service programs is provided by Ralph Fields in his 1962 review of the community college movement. Fields defined the programs as, ". . . those which involve both the college and community resources and are conducted to meet educational needs of individuals or enterprises within the community" (Fields 1962, p. 90). We can add to this definition that the community service programs are normally those provided over and beyond regularly scheduled day and evening classes. However, we must point out that community service programs should be distinguished from traditional adult or continuing education programs which for the most part consist of classroom instruction provided at different times and locations and to students other than those served by an

institution's traditional academic programs. Community service programs, as we describe them, consist not only of classroom training, but also of on-the-job training, technical consultation, counseling, research, and other special services which could best be provided to the community by occupational educators. In the broad sense of the term, community service programs include cultural and recreational services, and campus facilities used to better community life. However, this presentation will limit the discussion of community service programs to those which are most relevant to occupational educators.

Community Service Occupational-Technical Education Programs: Why All the Fuss?

The belief that community service programs are important to occupational educators is based on certain assumptions. One of these is that educational institutions at the high school and postsecondary level will experience a decline in the number of traditional students attending them. However, not only will the number of college-age people decline, but the competition to serve them will increase. Some of these competitive forces are industrial, business, and armed services manpower needs. It is true that part-time enrollment in community colleges has increased dramatically. However, educational institutions continue to operate with structures that remain fundamentally geared to full-time, degree-seeking credit students. Although a decline in full-time

enrollment is predicted, this may not occur because there is a potential for more growth through the provision of expanded occupational education community service programs.

Another assumption supporting the importance of community service programs is that the continued growth in our economy will become more dependent upon an adequately trained and fully functioning work force. While Harold Hodgkinson claimed in an earlier part of this program that robot automation threatened manpower development in Korea, I do not believe that organized American labor would allow such an occurrence here. Therefore, I do believe there will continue to be a demand for increased involvement in economic development activities by occupational educators through community service programs.

Thus, the importance of community service occupational education programs may be based on two assumptions: (1) the continued viability of educational institutions themselves which will be dependent upon increased involvement by occupational educators in the provision of community service programs; and (2) increased recognition by economic development agencies of the important role which occupational educators can play in manpower training and development through community service programs.

Community Service Objectives for Postsecondary Occupational Educators

There are basically two community service objectives which might be seen as important for occupational educators and which can be written as objective statements: (1) to provide occupational education services which utilize the special skills and knowledge of the institution's staff and other experts designed to assist individuals and enterprises in the community to solve work-related problems; and (2) to interpret your occupational education programs and resources to the community in order to enlist active citizen interest, support, and participation.

The adoption of these objectives by an occupational education program will probably result from an increased awareness of values, financial and otherwise, inherent in a program which keeps the community in constant touch with the college and could well lead to a more viable total educational organization.

Factors of Success for Occupational Education Community Service Programs

In 1967, Ervin Harlarcher presented what he believed to be critical behaviors involved in achieving objectives of a college-wide community services program. These critical behaviors will be adapted here to the provision of community service programs by occupational educators. Harlarcher described critical requirements as those procedures or behaviors judged by educational administrators to be

crucial factors differentiating success and failure. There are several critical factors relevant to occupational educators in their attempt to provide community service programs. First, there is the need to involve community groups in program planning and development. Community involvement is imperative if one hopes to develop a relevant community service program. An example of the importance of this criteria is a special typing skills class developed by an upstate New York community college. The class was designed for women hoping to return to the work force and was requested by a group of local insurance companies. The companies were faced with a staff shortage and hoped to attract mature women to the industry. The college had identified the need of mature women seeking training in order to gain employment. The curriculum for the special training program was developed by a group of insurance company executives and secretarial science faculty who were aware of the secretarial competencies required by the industry, and the personal needs of the women students who would be recruited into the program. Thus, the program aimed at developing typing efficiency, self-confidence, assertiveness, and other personal qualities sought by the women hoping to reenter the work force.

Second, identifying community needs and interests is a common criteria mentioned in relation to developing community service programs. However, it is not reassuring to discover how seldom community needs and interests are truly identified before a community

service program is developed. Often community service programs are provided because the college has an interest in the program or the resources are available, not because a true need for the program has been established. Programs developed on this basis are often short lived and unsuccessful.

Additional objectives which are self-explanatory include: tailoring programs to specific needs and interests, establishing high standards of performance, participating in community leadership and development, and obtaining total college support including board, administration, and faculty.

Types of Programs of Interest to Occupational Educators

Some occupational educators may have a difficult time recognizing the relevancy of community service programs related to their field of endeavor. It may be important to delineate some examples of community service programs which can be provided best by occupational educators.

1. On-site technical training to enhance industrial productivity. As our industrial economy is faced with rising inflationary costs and increased manpower needs, custom-designed training programs to increase industrial productivity have become very attractive to business and industry. Such a program is in operation at the Revere Copper Company in Rome, New York, providing instructon on the principles of metallurgy designed for

first-line supervisors. The course was developed by a community college at the request of the industry which hoped that by developing an overall understanding of metallurgical principles, foremen in this industry would be better able to stop, or at least reduce, the amount of industrial waste which resulted from incorrect decisions on the production line.

2. On-campus special training to fulfill manpower needs of an industrial group. Here again, the example of the secretarial up-dating course provided to meet the needs of both the mature housewife hoping to return to work and a group of insurance companies is a relevant example.

3. A math anxiety program to help open the door to occupational and technical training for people who are afraid of the mathematics studies included in these programs. All educators are aware of the need to attract nontraditional students to occupational and technical career fields. However, many of these students, including those who are educationally disadvantaged and/or those who society has stereotyped as being incapable of dealing with occupational studies, often lack the adequate math and science preparation required of the occupational and technical curricula. Obviously, it would be advantageous to occupational educators to provide to the community a special program aimed at reducing math anxiety. The end result would be a

larger potential market of students for occupational education programs.

4. Another community service program, related to the one discussed above in that it is indirectly related to recruitment in occupational programs, would be an on-campus basic skills improvement program for junior high school students. This kind of community service program would enlist the assistance of occupational education, mathematics, and reading and writing faculty members to provide basic instruction in a campus environment for educationally and economically disadvantaged youth. The program might include also an introduction to computers including actual "hands on" learning experiences. By introducing children at an early age to the campus environment, and by helping accelerate their arithmetic, reading and writing skills, such a program would help prepare these individuals to become potential students for occupational and technical programs.

Another example of a community service program which could be provided by occupational educators would be one to train master industrial craftsmen as teachers. The objective of such a program would be to prepare these craftsmen to train younger workers preparing to replace them upon their retirement and to become a resource for career educators in the community. After retirement these master craftsmen-

teachers would be able to enter the classroom and explain what the world of work is acutally like and how various academic subjects can be applied to one's job. Such a program is being proposed currently by an upstate New York industry which, like many other industries, is faced with the loss of large numbers of master craftsmen through retirement. Because apprenticeship programs no longer exist in this industry, it must explore ways to retain the skills of master craftsmen. One way is to provide an opportunity for the craftsmen to teach the younger employees their skills prior to their retirement. By developing an in-plant teacher-training program, in cooperation with a local college teacher-training program, the company hopes to achieve its objective in the near future.

One final example of a community service program which could be provided by occupational educators would be a career guidance service (open to the public) provided by college or vocational-technical school personnel. Such a service would provide a means of introducing occupational careers and training to a broader population than might otherwise be exposed to such information. Obviously, such a service would be of great assistance to the community and it would have a potential to recruit more individuals into our educational programs. Such a service is currently being provided by an upstate New York community college through a computerized vocational information system. The system is open to the public and has terminals in local public schools. Thus, high

school students and members of the community are able to avail themselves of this career guidance program.

College and Area Vocational-Technical School (AVTS) administrators often confuse community service programs with continuing education, thinking of them as a single function. It is hoped that these examples show that community service programs for occupational educators can be much more than classroom instruction.

Harlarcher (1967) has made it clear that community service programs should not be translated to "offer a new course--any kind of course--anytime a group of ten or more people want it, if teacher, space, funds, and equipment are available, assume that this fulfills the community services responsibility of the college" (p. 46).

Barriers to Successful Community Service Programs

The implementation of a community service program by occupational educators entails a departure from traditional classroom instruction. In so doing, such a venture is often faced wth several barriers. Some of these barriers are found within an institution, while others are caused by external forces. Internal barriers include: (1) community service programs are seen as extensions of regular academic programs, and therefore, secondary in importance; (2) the nature of a faculty member's participation in community service programs is not considered to be an important consideration when evaluating faculty performance; (3) community service programs are viewed mainly as a

source of extra income by faculty members; and (4) few full-time faculty are actively involved in the provision of community service programs.

External barriers to the implementation of community service programs consist of the following: (1) state funding formulas often do not provide financial aid for community service programs; therefore, such programs must be self-supporting which means higher cost to participants; and (2) in some states, such as New York, community service programs which provide preemployment training to economically disadvantaged individuals often result in a lessening of the state subsidy of new employee wages in on-the-job training programs.

Thus, it can be seen that internal biases which favor full-time classroom instruction, and external regulations which fail to realize the importance of occupational education community service programs often inhibit the development of these programs by occupational educators.

What Is Needed for Future Growth of Occupational Educational Community Service Programs?

1. Increased recognition by colleges of the value of community service programs to the point where the concept of community service has equal recognition with traditional academic programs.
2. State legislation recognizing the value of community service educational programs by

creating funding formulas which provide state fiscal support for these types of programs.

3. College organizational structures which reflect the importance of community service programs and which provide for the easiest implementation of such programs.

Additional efforts are also needed to allow the development of community service programs by occupational educators. One of these is the concept that community services needs to be promoted within the community and within the college so that occupational educators will be recognized as educational resources to be utilized by citizens throughout their lives. Another is that in order for community service programs, of the type described above, to be recognized, performance or competency rather than credit hours or other artificial measures of learning must be adopted by our community colleges and AVTS's as evaluative measures of learning. As Gleazer (1975) pointed out at this conference five years ago, "As we move out beyond the confines of traditional higher education, we will be pressed to evaluate new kinds of objectives with new kinds of measures. If the purpose of the evaluation is to be anything but punitive, it must be based on the relevant success in achieving objectives that do not reduce all performance to an hour of academic credit" (p. 66). Finally, occupational educators should broaden their base of community involvement to interact with educational organizations, CETA planning counsels, union organizations,

trade associations, and other groups having similar community service objectives and who can become new "allies" in the provision of occupationally oriented community service programs.

The Future of Community Service Occupational Education Programs

All levels of education are currently experiencing steady or declining resources. Such circumstances call for the establishment of new priorities and a better planned approach to the development of educational opportunities for our communities. However, occupational educators can look toward a bright future because they will be acknowledged as a valuable learning resource by increasing numbers of people who want to earn a living and remain employed. Through the development of some community service programs, occupational educators can become contributors to critical social problems with educational elements that can be identified and dealt with in creative, positive ways.

Summary

In an attempt to provide a conceptual framework for the involvement of occupational educators in community service programs, this paper includes a discussion of the value of community service programs and barriers to their implementation. Also presented were examples of successful occupational community service programs and some propositions for the future

growth of these programs. Community service programs were shown to be valuable student recruitment tools and economic development aids capable of being successfully implemented, despite barriers.

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Highlights of Discussion on Community Service Programs

1. The demand for community service programs has increased both in the public and private sectors. Such programs are being established currently by various community colleges throughout the country.
2. Communities should be involved in the planning and implementation of their own community service programs.
3. A main focus of community service programs should be business and industry.
4. Business and industry should be contacted by any organization or agency that is involved in developing community service programs. Cooperative education personnel employed by community colleges, vocational technical centers, and comprehensive high schools can be used to facilitate articulation between institutional facilities and business and industrial personnel in order to develop community service programs that meet specific needs of the area's businesses and industries.
5. Developing and implementing apprentice training for trade unions and other organizations can be used to present and organize a community service program.
6. Coordination can be a problem for community service programs. Articulation among community

colleges, comprehensive high schools, vocational-technical centers, and other community service agencies and organizations is necessary if community service programs are to be successful.

7. A large percentage of the time and energy involved in developing and implementing community service programs is spent in the coordination of various agencies and organizations; meanwhile, individuals in need of these services must wait for them. A possible solution to this problem is to coordinate a few agencies and organizations which could develop programs that operate efficiently. This, then, can act as an example for other agencies and organizations.
8. There is increased competition among agencies, organizations, and institutions in the community service area. Because of this, a larger portion of the available funding for community service programs is being spent on advertising.
9. Faculty from educational institutions can act as a negative force against the development and implementation of community service programs. In part, this is due to the fact that many institutions do not recognize their faculty's participation in community services when they are being evaluated for promotion, tenure, and salary increases.
10. Keeping the faculty and staff informed about the developments and activities of the community

service programs may help to obtain their support.

11. Administrators, members of boards of trustees, and the consumers of community service programs tend to be the supportive forces in developing and implementing community service programs.
12. Television, radio, and the newspaper should be used to present community service programs to the public.

NEW AND EMERGING CAREERS

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In preparing for today's presentation, I researched the 1979 Technical Education Yearbook to determine the most typical curricula offered by post-secondary schools (those offering less than a baccalaureate degree program). The following list of twenty-four subject areas is representative of those curricula offered by most of the community colleges, junior colleges, and technical schools, not only in the Commonwealth of Pennsylvania, but throughout the entire Atlantic Coast region of the United States. This curricula list consists of:

Accounting
Business Administration
Data Processing
Secretarial Science
Architectural Drafting
Electronics
Medical Records
Dental Assistant
Nursing
Welding
Criminal Justice

Retail Management
Drafting and Tool Design
Commercial Broadcasting
Radio and TV
Air Conditioning, Heating, and Refrigeration
Real Estate
Insurance
Automotive
Commercial Art and Design
Hotel/Restaurant Management
Surveying
Building Construction
Cosmetology

The first question that came to mind as I reviewed this list was: Is there a continued demand only for these programs or should we be looking to new and emerging careers? Obviously, it would be ridiculous to discontinue these traditionally successful programs for which there is a great need in today's society. However, to not broaden or expand upon our curriculum horizons, and to not offer more specialized programs to satisfy the needs of today's technical society would be a devastating shortcoming on the part of education, and more specifically, vocational education.

The subject which I would like to address is "New and Emerging Careers" as they relate to postsecondary schools. Initially, I would like to make some general philosophical comments before making specific

statements pertaining to three areas of interest: home economics, solar technology, and mining technology.

Although most, if not all, of you are probably familiar with the steps and procedures that should be taken to properly plan for, organize, and implement a new curriculum program, I would like to reemphasize some of the procedures in this critical process. I make this statement because during the past five years I have seen numerous "Johnny Come Latelies" enter into the energy picture without the proper planning and coordination with local communities and industry. As a result, many of these "Johnny Come Latelies" are "here today--gone tomorrow." Unfortunately, some of these organizations had the potential for establishing credible programs if a logical sequence of steps had been followed.

The first step in the planning and organizing stage is that of informing staff and administrative members of an institution of the current state of the art pertaining to whatever technology is being considered--coal, solar technology, etc. It is mandatory to obtain the most accurate estimates of the need for technicians or specialists in a particular field. Information regarding manpower demands in the immediate and perhaps distant future must be gathered and analyzed on a local, regional, and national level. Valuable information may be obtained from such agencies as the Department of Labor, Bureau of Labor Statistics, Department of Commerce, the Energy

Research and Development Administration, the Department of Interior, and numerous trade and technical publications pertaining to the proposed field.

If a regional and national assessment determines that a need does exist for a program, the next logical step is to make a comprehensive survey of the type of specialist or technician to be trained and the need for such a person in the area or region to be serviced by the educational institution. The most realistic way to gather information is by the establishment of an advisory committee with strong representation from local employers, related labor organizations, and influential community leaders who have a dual interest in the school's program and servicing the needs of the local community. The survey should determine what job opportunities exist for the graduate of a proposed program--not only on a job entry level, but also in regard to promotion and greater responsibilities later in the graduate's career. At the time this information is being gathered from the advisory committee, a determination can be made also of the elements that constitute the skills and knowledge that the specialist or technician must possess in order to be successful. The gathering of these elements will be the basis for the program curriculum.

The most effective source of information will come from upper management personnel in the local industries that will hire the graduates of the program. They will forecast manpower needs and will know the skills necessary to be successful in a particular

technical area. In addition to providing preassessment information, the advisory committee will form a group of interested and informed citizens who can be called upon to support the program in times of need.

Generally, for technical areas, a study indicating a need for approximately thirty graduates per year for a period of several years in a geographic region is an indication that a favorable decision should be made to implement a program. Numbers less than the approximate thirty may require more scrutiny by the faculty, administration, and local community. For smaller numbers, other questions which should be addressed are: (1) will this introduction of a new technology strengthen a program already in existence? (2) can existing facilities be useful to the program? (3) will there be a more substantial demand for the graduates in the future (i.e., four to five years in the future)? (4) does the need for manpower training in this academic area justify the high cost of training per person?

In technical areas, such as solar and mining technology, the assessment and planning stage may take two to three years. This time frame, coupled with the fact that a minimum of two years will be required to produce the first group of graduates (for an associate degree program), results in a period of five years before any concrete results are seen in the employment arena. Nevertheless, the point that needs to be made is that this is not something that is done overnight, but rather takes a great deal of time and planning on

the part of academicians, industrial representatives, and local community leaders.

Home Economics

Next, I would like to make some comments regarding new and related careers in home economics. This information has been furnished by Dr. Susan F. Weis of The Pennsylvania State University's Division of Occupational and Vocational Studies.

Recent research suggests that occupations deriving from homemaking skills are underdeveloped and devalued by American society.[1] Labor force participation of females is at an all-time high which tends to support a need for occupational development in home economics related jobs. This need is further supported by the increased social phenomenon of "displaced homemakers."[2] The term erroneously suggests that traditional homemaking skills are less useful and marketable in a postindustrial society than in previous times.

The field of home economics related occupations is heavily sustained at this time by the awesome food

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[1]Mary Witt and Patricia K. Naherny, Women's Work-Up From .878: Report on the DOT Research Project (Madison, Wisconsin: University of Wisconsin-Extension, January 1975).

[2]Beatrice H. Bagby, "Displaced Homemakers in the Midst of Crisis," Journal of Home Economics 71 (Summer 1979):24-26. See also Tish Sommers and Laurie Shields, "The Economics of Aging Homemakers," and "Homemaking: The Invisible Occupation," Journal of Home Economics 71 (Summer 1979):16-19, 20-23.

service industry--the third largest industry in the country in dollar volume.[1] The clothing production and services field has not been as thoroughly developed with occupational preparation programs as that of food service, production, and management, and both fields contain some stubborn remnants of traditional sex discrimination which discourages female career participation and development in the total spectrum of related occupations in these fields.

One growing occupational area which begs for development, greater job definition, and understanding, is that of child care services. This field is particularly undervalued and underpaid at this time. Since large and progressive firms are now offering or exploring child care as a fringe benefit to employees, the 1980s may bring significant changes to this field and added sophistication to the career possibilities, working conditions, and wages associated with it.

The impressive electronics technology of the 1970s offers some intriguing possibilities to home economics. It would be worthwile for home economists to attend to, research, and develop the occupational derivations from a marriage with the electronics field, particularly as it impacts upon the management and operation of the home, its treasure of resources, and its dependent links to the community. Presently,

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[1]From a speech presented by Walter Conti at the Food Service Curriculum Inauguration Workshop, October 20, 1977, Allentown, Pennsylvania.

the maintenance of household records, inventories, budgeting, and managing credit and tax materials is enhanced with the aid of home computers. The potential exists for these devices to provide vital linkages from the home to community affairs and resources as well. The implications of such development are compelling and deserving of attention.

Solar Technology

The United States is in the midst of a serious and continuing energy problem that will not be solved in the immediate future. We must, therefore, seek ways of meeting both our immediate and long-range energy demands. One possibility which has received a great deal of attention during the present decade is that of home heating and heating for small businesses by capturing the sun's radiant energy falling upon the earth. The amount of solar energy striking a square foot of the earth's surface varies greatly throughout the United States and climatic factors such as temperature, cloud cover, humidity, and wind must be taken into consideration when establishing a solar heating system. Nevertheless, all areas of the United States can benefit from solar energy when used for heating homes and small businesses.

Solar heat installations currently in use depend upon capturing the heat of the sun's rays as they fall upon the exposed surfaces by transmitting this heat to a fluid in a collection system and then pumping the heated fluid to a reservoir tank from which the heat

is drawn, or by direct heat from the sun's rays or passive solar heat. There are many parallels between solar heat and the use of other heating elements such as gas, coal, or oil. Accordingly, there is, and will continue to be, an even greater demand for technicians in the areas of solar heating similar to the existing needs in the areas of air conditioning, heat, and refrigeration technology. However, the technician pursuing a career in solar technology will require a greater understanding of fluid pumps, circulating systems, and storage units than is required for the other previously mentioned areas.

A recent article in the Sunday Denver Post estimated that solar technology and its support services could produce a net gain of approximately 3 million jobs over the next decade. The article stated that approximately 1.7 million new positions would be created for persons installing solar heating and cooling units, another 500,000 persons would be hired for the installation of insulation and other energy-saving equipment, and the balance would be skilled personnel required to provide support services in the installation and construction of solar systems such as sheet metal workers, carpenters, plumbers, pipe fitters, construction workers, and production in-line workers of all kinds.

What is solar heating and cooling technology? Solar heating and cooling technology is a two-year collegiate program designed to prepare solar

technicians for the expanding solar and related industries. Technicians will be prepared to help design, specify, test, and supervise installation, make cost estimates for residential and commercial solar energy, and assess heating and cooling systems involving the use of recognized standard components.

What do graduates in solar heating and cooling technology do? Solar technicians size and lay typical solar components used in residential and commercial solar systems with guidance from components manufacturers. They assist in planning and supervising the installation of the solar components, and they can troubleshoot common solar-assisted heating operational problems and supervise periodic maintnenance. Also, they select, procure, and install instrumentation to evaluate the performance of the system, assist in the analysis and correlation of the collected data, and make investment analyses of proposed solar energy systems.

Such a program was started recently at The Pennsylvania State University's Fayette Campus in Uniontown. To our knowledge, this was the first two-year degree program in solar technology east of the Mississippi. The first solar technology class will graduate in the spring of 1980 and has an enrollment of twenty-four students. The second class, scheduled to graduate in spring 1981, has an enrollment of sixty-two.

In the second year of the program each student will select a potential solar application in which he

or she is interested. The student will size the collector ray for that application, lay and size required duct work and/or piping, select the system components (i.e., pump, fan, heat exchanger, controller) from vendor catalogs and predict the installation costs and economic payout of the installation. In addition to the aforementioned individual design package, each class will actually be involved in one or more solar installations within the local community. The students will collectively design the system, order the components, mount the collectors on the supports they build, and follow the installations through start-up to correct any errors they might detect.

Graduates from solar technology can gain employment in five possible areas: (1) design of systems, (2) troubleshooting existing systems--specialists in this area will be required by a company that may already be doing heating and cooling repairs, (3) banks--evaluating construction loans for homes and buildings proposing to utilize solar installations, (4) tax assessment, and (5) research and development.

According to the National Solar Energy Education Directory, Pennsylvania currently has approximately thirty institutions offering solar related courses and only a handful of educational institutions offering an associate degree in solar technology.

In addition to a two-year technology degree, short courses are also becoming popular throughout the country and provide information valuable to the

financial community, architectural designers, and builders of small commercial buildings and homes. Another type of short course that also has become popular is the one- to three-day short courses or seminars for home owners to provide general information regarding purposes, designs, and installations of solar heating systems.

In an interview with Dave Meredith of the Solar Technology Program at the Fayette Campus, I was informed that starting annual salaries for his first-year graduates were to be in the area of $14,000 to $16,000 with the high end of the scale being offered by the TVA in the salary range of $22,000. One company in Texas approached a local educational institution offering solar technology and expressed a willingness to hire the first 100 graduates of the program.

Mining Technology

Fossil fuels are of primary importance to the United States, not only in terms of power production, but also in industry. With increased emphasis on energy self-sufficiency, fossil fuels are regarded as the primary source of energy in the foreseeable future. Estimates vary widely according to definitions--i.e., economically recoverable coal, technically feasible recoverable coal, etc.--but generally a breakdown of fossil fuels in the United States indicates that coal reserves, which are economically recoverable with current technology, are

sufficient enough to last the United States at projected production increases for a period of approximately 500 years.

A geographical scanning of Pennsylvania revealed that most of the southwestern and central portions of the state have areas of bituminous coal and the northeastern panhandle of Pennsylvania has the only large anthracite deposit in the United States. President Carter's emphasis and push toward an increase in coal production, and subsequent conversion of many industries from gas and oil to coal, will place an enormous increase on manpower demands for the mining industry.

A look at the mining labor force will reveal that most miners presently employed are in their twenties or fifties. There is a great gap between the two age groups due to the decline the industry experienced during the 1950s when very few people entered the mining industry. This fact, coupled with the current United Mine Workers of America contract making it possible for people to retire at age fifty-five, has created a new potential for employees in the mining industry. This trend is one which will continue during the next few decades.

Because there have been many technical improvements in mining methods and mining machinery during the past four decades, there has been an increase in demand for personnel capable of repairing and maintaining complex and sophisticated equipment.

A recent Federal Mine Safety and Health Act and a United Mine Worker contract further require that

certain training be mandatory for miners. There are several factors which might direct educational institutions to involve themselves more extensively in mining technology programs:

1. The increased emphasis on coal as an energy source due to uncertainties of nuclear energy and the relatively short supplies of gas and oil.
2. The increase in manpower will be necessitated by increasing emphasis on more tonnage, and the replacement of miners who are now eligible for retirement.
3. The increase in production required for energy independence and a movement away from foreign oil imports.
4. Mandatory federal and union training for mine employees in the areas of preemployment training, annual refresher training, training required for new job tasks, and supervisory training.

There are four areas in which postsecondary institutions can provide skilled personnel for the mining industry: associate degree technicians; health, safety, and training specialists; maintenance technicians; and supervisory training programs. The associate degree in mining technology prepares students for career positions of a management-oriented or engineering-oriented nature in the mining industry. The options within the curriculum, selected at the beginning of the second year, provide a choice among underground production, surface mining, maintenance, and coal preparation. Many of the graduates of this

program, after serving the necessary apprenticeship, become certified managers in the field.

The underground production option and surface mining option prepares a student to become a mine foreman and an engineering aide. Initially, some of the assigned duties are to keep mine maps up to date and make projections, make time studies, assist with materials, handle layouts, run transit, and act as survey party chief.

The maintenance option prepares a student to become a maintenance supervisor. Initially, the graduate would work as an apprentice electrician or mechanic and would gain experience in repairs and maintenance. Once certification is obtained, it is expected that the graduate would become involved in maintenance planning and work as, or with, the chief mine electrician.

The coal preparation option, the most recent which is soon to start at the New Kensington campus, would prepare the student for such tasks as taking samples and running analyses, and running float, sink, ash, volatile, and sulfur analyses.

A second area with great potential for development is that of health and safety training. Miners, operators, suppliers, regulatory agencies, and labor are all concerned with the safe production of coal. Any accident is of personal interest to the individual injured, his coworkers, and the operating company. Any mining curriculum that proposes to meet the needs of the industry should have in the curriculum, either

as a course or a degree option, a program in health and safety training.

The recent Federal Mine Safety and Health Act of 1977 and the training amendments to the Act dictate mandatory training. This training program, like that of the United Mine Workers of America, is accident prevention and safety management oriented. Regulations that will require even more stringent training programs for supervisory personnel are already in a draft format.

With the passage of the Federal Mine Safety and Health Act, many operating companies have doubled the number of salaried personnel working in the area of training and safety. Salaries for instructors of health and safety training programs will vary according to experience, but generally are between $14,000 and $25,000 per year with the safety and training directors receiving approximately 30 percent more than that of the instructors. The health and safety programs place a strong emphasis on accident prevention as well as mine emergency procedures, mine rescue, first aid, fire prevention, roof and rib control, ventilation, and gas detection.

A closely related area to mine health and safety training is that of emergency medical training. Pennsylvania's Department of Deep Mine Safety has initiated and has continued to upgrade the emergency medical training capabilities of mine operators. Presently, there is a strong union movement advocating

that there be one miner EMT certified for every section in a mine (one EMT per ten miners).

Technology programs dealing with mine maintenance are of universal concern to all segments of the mining industry. Mine operators have a keen interest in preventive maintenance programs, equipment repair, and a reduction in maintenance costs. Government regulatory agencies, such as Pennsylvania's Department of Environmental Resources and the Federal Mine Safety and Health Administration, are concerned with the safety aspects surrounding maintenance repair and the proper means of accomplishing it.

Not only are maintenance personnel who graduate from a mine maintenance program qualified to work for an underground or surface mining operator, but there is also a great demand for comparable positions with mining machinery manufacturers and repair companies. There are also opportunities for qualified personnel in state and federal regulatory agencies performing inspections on mining equipment.

The final area of concern in the mining technology curriculum is that of supervisory or mine management training. Mining operators are constantly concerned with developing supervisors from miners who are presently employed. As mentioned previously, there is a severe shortage of workers between the ages of thirty and fifty. It was also stated that during the immediate future many supervisors will be retiring due to more attractive pension options of the UMWA

contract. These events have resulted in a severe shortage of first-line supervisors.

Because today's supervisors are less experienced than the foremen of yesteryear who had twenty or thirty years of practical experience before becoming supervisors, it is even more critical that curriculum programs be available to qualify miners for supervisory and managerial positions. A curriculum to qualify a student as a mine foreman would include instruction in supervisory skills (to include communication and humanistic skills), maintenance, roof and rib control, gas detection, ventilation, health provisions such as noise and dust, production planning, and various state and federal mining laws.

Because most coal mines in this state are represented by United Mine Workers of America, the supervisor must be familiar with all mandates of the union contract to avoid unnecessary wildcat strikes and must possess proper humanistic skills necessary to promote a healthy labor/management relationship.

The supervisor also needs to be knowledgeable of maintenance procedures and, as a minimum, be familiar with the basics of any electrical, mechanical, or hydraulic system.

With increasing emphasis on environmental concerns, it is not surprising that foremen must also be experts in areas of noise and dust control. Additionally, they must be concerned with the safety and well being of their miners to include training and instruction in courses of explosive gas detection,

mine ventilation, and roof and rib control, or ground control.

An education in the production phase of underground or surface mining entails a knowledge of cost effective maintenance, coal preparation, plant operations, and safe and efficient production cycles to ensure the maximum safe production output for a particular operation.

Finally, and not the least important, is the awareness the supervisor must have for state and federal mine laws which regulate their working procedures and dictate minimum health and safety standards of the working environment. The supervisor must maintain his legal knowledge current with the ever-increasing legislation entering the mining industry.

Highlights of Discussion on
New and Emerging Careers

1. When designing a new curriculum, programs should be coordinated with community and industrial leaders.
2. Advisory councils should be formed and used as much as possible.
3. New programs related to new career opportunities should be planned well in advance, at least two years.
4. Job opportunities should be explored thoroughly before firm plans are initiated.
5. Within agriculture, new careers are emerging dealing with energy formulation. These career programs exist in the dairy, food marketing, and agriculture science fields, to name a few.
6. Recently in New York, there have been more graduates in agriculture engineering and agriculture technology than there have been job openings.
7. Interest must be created for a new program while it is still being planned to insure full enrollment.
8. More emphasis should be placed on short courses to reach the student who does not wish a two-year or four-year degree, such as Associate of Occupational Studies (AOS) degrees offered in New York.
9. An effort should be made to use existing programs to teach new career skills. This would cut down

on the excess paperwork and funding of a new program.

10. CETA is not going to cure all the ills of any one community. More work should be done to deregulate some of its programs.
11. The students' needs should be placed first on any list of objectives for any new program.
12. Follow-up studies of graduates of all programs should be planned for any new curriculum so that the planner can tell if students use their education within the field in which they were trained.

APPENDIX A

ELEVENTH ANNUAL CONFERENCE
ON POSTSECONDARY OCCUPATIONAL EDUCATION

October 3-4, 1979
J. Orvis Keller Conference Center
The Pennsylvania State University

PROGRAM

THEME: NEW HORIZONS IN POSTSECONDARY OCCUPATIONAL EDUCATION

Wednesday, October 3, 1979

10:00 a.m. Registration: Lobby, Keller Conference Center

12:00 noon Lunch (on your own)

2:00 p.m. Introduction: S. V. Martorana
Professor of Higher Education and Research Associate
Center for the Study of Higher Education
The Pennsylvania State University

2:00 p.m.	Keynote Address:	Dr. Harold L. Hodgkinson President National Training Laboratories Arlington, Virginia
	Recorder:	John Vincent
3:30 p.m. Group A	Moderator:	J. L. Wircenski Associate Professor Vocational Education, The Pennsylvania State University
	Presenter:	Ms. Margaret "Peg" Pyne Coordinator, Project ACCESS North Shore Community College Beverly, Massachusetts
	Topic:	Retraining Programs for the Handicapped Adult
	Reactors:	Tom Cooke, Charles Kraft, Boyd Lehman
	Recorder:	Pamela Carey

3:30 p.m. Group B	Moderator:	D. E. Evans Assistant Director, Vocational Teacher Education, The Pennsylvania State University
	Presenter:	M. Michael Freedland President, Philadelphia Printing School Philadelphia, Pennsylvania Secretary, National Association of Trade and Technical Schools Former Chairman, NATTS Accrediting Commission
	Topic:	Upgrading Programs in Post-secondary Occupational Education
	Reactors:	Ray Morton, Larry Whitworth, Thomas TenHoeve
	Recorder:	Ed Whyte
4:30 p.m.	Refreshment Break:	Multipurpose Room (ground level)

4:45 p.m. Group A	Moderator:	J. L. Wircenski
	Presenter:	M. Michael Freedland
	Topic:	Upgrading Programs in Post-secondary Occupational Education
4:45 p.m. Group B	Moderator:	D. E. Evans
	Presenter:	Ms. Margaret "Peg" Pyne
	Topic:	Retraining Programs for the Handicapped Adult
5:45 p.m.	Social, Cash Bar	Nittany Lion Inn Fireside Lounge
Evening	(On your own)	

Thursday, October 4

Breakfast	(On your own)

9:00 a.m. Group A	Moderator:	S. V. Martorana
	Presenter:	Dr. W. Gary McGuire Dean, Center for Lifelong Learning and Community Services Mohawk Valley Community College Utica, New York
	Topic:	A Conceptual Framework for Occupational Education Community Service Programs
	Reactors:	Robert Fenton, Nancy Barmont
	Recorder:	Walter Heizenroth
9:00 a.m. Group B	Moderator:	D. E. Evans
	Presenter:	James D. Bennett Director of Mining Continuing Education The Pennsylvania State University
	Topic:	New and Emerging Careers

	Reactors:	Tom Leamer, William Benson, Harry Buhay
	Recorder:	J. S. McCoy
10:30 a.m.	Refreshment Break:	Multipurpose Room (ground level)
10:45 a.m. Group A	Moderator:	S. V. Martorana
	Presenter:	James D. Bennett
	Topic:	New and Emerging Careers
10:45 a.m. Group B	Moderator:	D. E. Evans
	Presenter:	Dr. W. Gary McGuire
	Topic:	A Conceptual Framework for Occupational Education Community Service Programs
12:00 noon	Conference Completed	

APPENDIX B

PLANNING COMMITTEE

Dr. S. V. Martorana, Center for the Study of Higher Education, The Pennsylvania State University, University Park, Pennsylvania 16802.

Dr. Donald E. Evans, Department of Agricultural Educatation, The Pennsylvania State University, University Park, Pennsylvania 16802.

Dr. Jerry L. Wircenski, Division of Occupational and Vocational Studies, The Pennsylvania State University, University Park, Pennsylvania 16802.

Dr. Kenneth P. Mortimer, Director, Center for the Study of Higher Education, The Pennsylvania State University, University Park, Pennsylvania 16802.

Dr. Gene M. Love, Head, Department of Agricultural Education, The Pennsylvania State University, University Park, Pennsylvania 16802.

Dr. Elizabeth M. Ray, Head, Division of Occupational and Vocational Studies, The Pennsylvania State University, University Park, Pennsylvania 16802.

APPENDIX C

NOTES ON THE AUTHORS

HAROLD L. HODGKINSON was named Executive Director of The Professional Institute of American Management Associations in June 1977, serving in AMA's Washington, D.C. office. Prior to this position he served as Director of the National Institute of Education since 1975. Earlier in his career, he had served Simmons College as Dean of the School of Education, Bard College as Dean of the College, and the University of California at Berkeley as Research Director of the Center for Research and Development in Higher Education. Dr. Hodgkinson has directed several research projects and is the author of twelve books and twenty articles. He is widely known as a consultant to educational institutions. An Adjunct Professor of Education at the University of Michigan, he is also past president of the American Association for Higher Education and testified before the President's Commission on Campus Unrest in 1970. He was the recipient of the HEW Secretary's Special Citation and received the Distinguished Service Award from the Assistant Secretary of Education. He holds honorary degrees from Grand Valley State College, Ottawa University, Lake Michigan College, and Mount Senario College. Dr. Hodgkinson is married and has three children. He holds a B.A. from the University of

with developmental disabilities. Ms. Pyne serves actively as a statewide board member and officer of the Massachusetts Association for Retarded Citizens and the Epilepsy Society of Massachusetts. Other professional affiliations include the American Vocational Association, National Rehabilitation Association, and Association on Handicapped Student Service Programs in Postsecondary Education.

M. MICHAEL FREEDLAND is a native of Elkins Park, Pennsylvania, and was educated at Temple University in Philadelphia. His introduction into the field of technical training dates back to early 1949 when he founded the first Radio Television Technical School in Allentown, Pennsylvania, and New Jersey where a variety of trade skills are taught. In 1969, the group of schools organized by Mr. Freedland was purchased by Rider Systems, Incorporated, and he was assigned the Presidency of this group known as Ryder Technical Institute. He now serves as President of the Philadelphia Printing School which he purchased and reorganized in 1976. Mr. Freedland is active in many civic activities. He was appointed by the Governor of Pennsylvania to serve on the State Advisory Council in 1975. He served on the executive committee of the Council and as chairman of the public meetings committee in 1976. He was reappointed for three consecutive years. He was elected vice-chairman in 1977 and chairman in 1978 for the Pennsylvania State Advisory Council on Vocational Education. He

also served as chairman of the Pennsylvania Department of Education, Private Trade School Board, and is currently a member. Presently, he is serving as Secretary of the National Association of Trade and Technical Schools (NATTS) after being elected at the 1979 annual convention. Mr. Freedland served two three-year terms as Commissioner of the Accrediting Commission of NATTS, headquartered in Washington, D.C. He was one of the founders of NATTS, and served on the first Board of Directors. He is a past President of the Pennsylvania Association of Private School Administrators. Appointed by the Secretary of Education for the Commonwealth of Pennsylvania, he served on a number of committees--among them the committee for researching and establishing the Associate in Specialized Technology Degree Program for private trade, technical and business schools, and a Task Force to revise the certification process of vocational teachers and supervising personnel. In 1975, he was honored with the Annual Outstanding Member Award by NATTS, and was presented a Lifetime Membership Award for contribution to the technical training efforts of private schools by the Pennsylvania Association of Private School Administrators.

W. GARY MCGUIRE was recently appointed Dean of the Center for Lifelong Learning and Community services at Mohawk Valley Community College, Utica, New York, after serving as the Director of Special Programs, Division of Community Services, at the same

institution from 1975 to 1979. A native of western New York, Dr. McGuire received his A.A.S., B.A., and M.Ed. degrees from the State University of New York at Buffalo. He earned his D.Ed. in Higher Education from The Pennsylvania State University in 1979. Dr. McGuire is active in numerous community service and professional organizations. In recent years, he has directed several research projects funded through the New York State Education Department. Dr. McGuire is married and has a daughter and two sons.

JAMES D. BENNETT is the Director of Mining Continuing Education, and Instructor of Mining Engineering at The Pennsylvania State University. His job responsibilities include curriculum development, instruction, and implementation of training and safety programs for the mining industry of Pennsylvania. Mr. Bennett is the coordinator and codirector of thirty-six short courses in mineral engineering offered annually to the mining industry. In 1976, on a leave of absence from Penn State, he obtained four months of practical mining experience. Mr. Bennett has written and edited several mining publications and has served as a consultant to major companies and national organizations. In recent years, he has researched systems and materials used in mining. He received his undergraduate education from West Virginia University, an M.A. from Eastern Kentucky University, and is presently enrolled in the doctoral program in vocational-industrial education at Penn State.

APPENDIX D

NOTES ON THE EDITORS

JERRY L. WIRCENSKI is associate professor in the Division of Occupational and Vocational Studies and faculty associate at the Center for the Study of Higher Education at The Pennsylvania State University. He holds a Ph.D. in vocational technical education from Ohio State University and is currently serving as coordinator of postsecondary and adult education in the Division of Occupational and Vocational Studies. Prior to his appointment at Penn State, he served five years on the faculty at Purdue University, including one year as program coordinator for vocational-industrial education. He has published numerous articles and research reports in the area of vocational technical education, and has been a consultant to business, labor, and industry.

DONALD E. EVANS is assistant director of vocational teacher education at Penn State and assistant professor in the Department of Agricultural Education, affiliate assistant professor of vocational-industrial education in the Division of Occupational and Vocational Studies, and a faculty associate at the Center for the Study of Higher Education. He is head of the general agriculture major and the College of Agriculture Coordinator for Internships. Dr. Evans has a B.S. in Agriculture and Biological Sciences, an M.Ed.

in Agricultural Education, and a D.Ed. in Vocational-Industrial Education from Penn State. He teaches undergraduate and graduate courses, and conducts sponsored research through the Agricultural Experiment Station and the Pennsylvania Department of Education. Dr. Evans is the state coordinator for the 1979 Pennsylvania Vocational Education Conference. He has published numerous monographs, research reports, and articles in agricultural education and vocational-industrial education. He and his wife own and operate a beef and crop farm at Spruce Creek where he is active in several agricultural cooperatives, farm and civic organizations, and the church.

S. V. MARTORANA is research associate at the Center for the Study of Higher Education and professor of higher education in the College of Education at Penn State. Dr. Martorana has an M.S. and Ph.D. in education from the University of Chicago. Before joining the University, he was vice-chancellor for community colleges and provost for technical-vocational education, State University of New York; he earlier served in a number of administrative and policy-making capacities in higher education, particularly in the areas of community colleges and statewide planning and coordination. He has published numerous books, monographs, and articles in these areas, among which are Organized Occupational Programs Leading to Degrees (with Henry H. Armsby and Walter C. Eells), Criteria for Establishing Two-Year Colleges

(with D. Grant Morrison), State Boards Responsible for Higher Education (with Ernest V. Hollis), Managing Academic Change (with Eileen Kuhns), Regionalism in American Postsecondary Education: Concepts and Practices (with Larry A. Nespoli), "Assessing Student Progress in Preparation for Work" in New Directions for Community Colleges (Summer 1977), and "Responsibilities and Responses of Two-Year Colleges" in Reassessing the Link Between Work and Education, New Directions in Education and Work, L. C. Solmon, ed., (Spring 1978). Dr. Martorana also chaired the planning committee and was coeditor of the proceedings published from the Eighth, Ninth, and Tenth Annual Conferences on Postsecondary Occupational Education.

CENTER FOR THE STUDY OF
HIGHER EDUCATION
THE PENNSYLVANIA STATE UNIVERSITY

THE CENTER FOR THE STUDY OF HIGHER EDUCATION was established in January 1969 to study higher education as an area of scholarly inquiry and research. Dr. Kenneth P. Mortimer, its director, is aided by a staff of twenty, including five full-time researchers and a cadre of advanced graduate students and supporting staff.

The Center's studies are designed to be relevant not only to the University and the Commonwealth of Pennsylvania but also to colleges and universities throughout the nation. The immediate focus of the Center's research falls into the broad areas of governance, graduate and professional education, and occupational programs in two-year colleges.

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